Textile Industries

MAY, 1949

formerly COTTON Textile Industries

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MAY -6 1949

Would you want the slow construction pace

of 47 years ago— even at lower cost?

The *Engineer* helps reduce time and cost

Three mules and a half-yard scoop were a symbol of efficient construction half a century ago.

Then, horsepower was quadruped and paced by a leather-lunged mule skinner. Now, horsepower is caterpillar-treaded with a diesel engine skinner.

Likewise the "donkey engine" and the "dinkey" locomotive have been superseded and almost forgotten.

The parallel carries through every phase of construction—provided it is well-planned.

Today, as always, good management is primarily concerned with the thoroughness of the planning, the soundness of the engineering and the alertness to time-and-cost-saving methods.

The Engineer contributes multiple and ultimate economies to the construction projects he helps plan and design for his clients.

Engineers for 47 years . . . J. E. SIRRINE COMPANY

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A DEPARTMENTALIZED ENGINEERING ORGANIZATION SERVING WORLD-WIDE INDUSTRY

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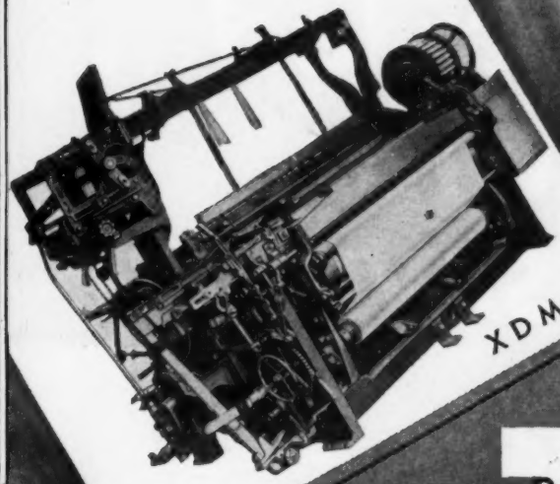
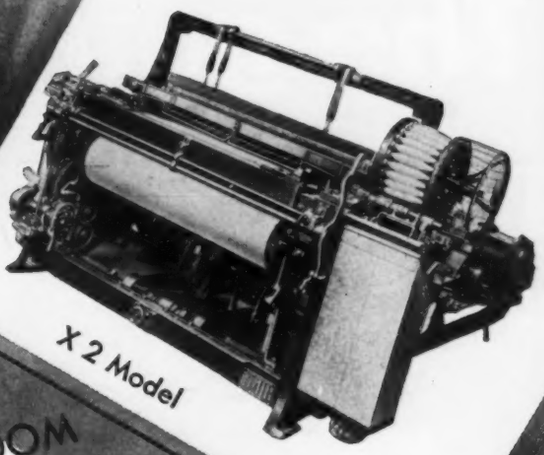


X D Model



X 2 Model

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PRODUCES MORE CLOTH
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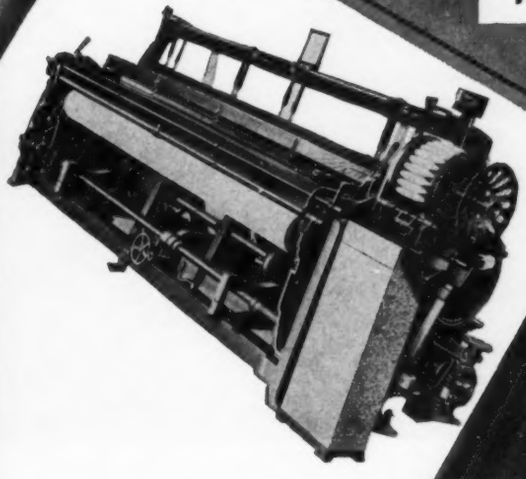
X L Model



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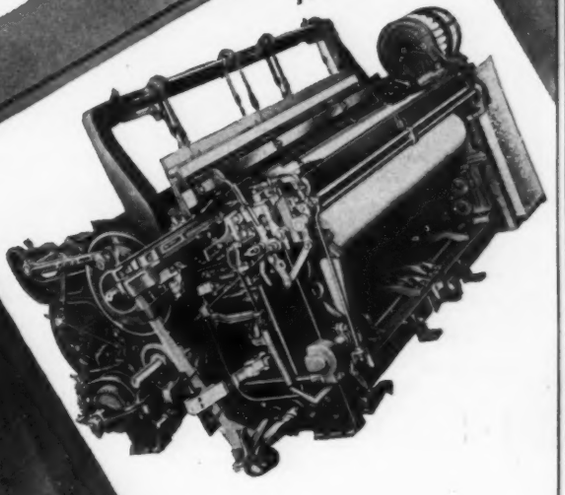

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Textile Industries

May, 1949

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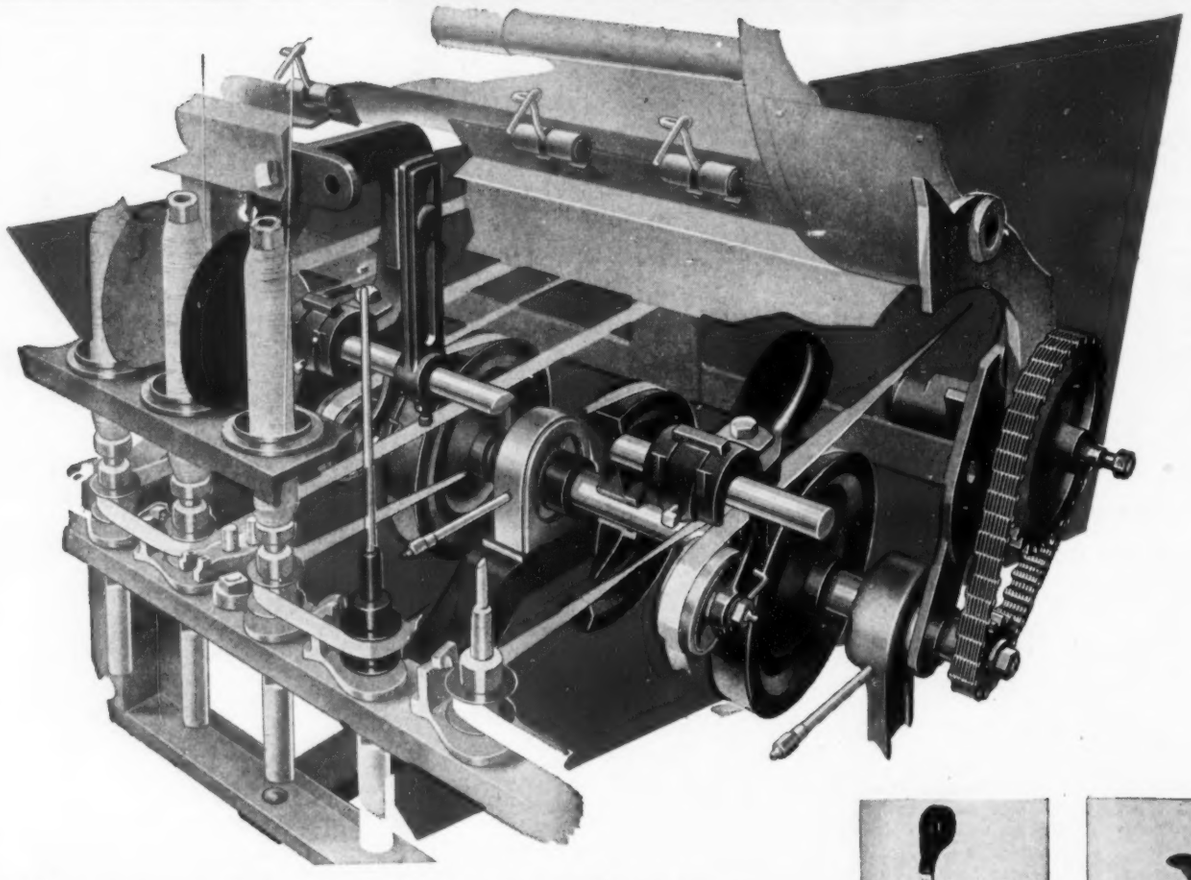
give your old frames that new look

with MEADOWS Conversions!



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● The present cost of new frames, plus the natural desire to improve and utilize existing equipment, has prompted many mills to modernize their old frames, (either band-driven or old style tape-driven) with *Meadows Conversions* . . . Consisting of silent chain-drive; individual driving pulleys; high-strength ground and polished shafting (mounted on heavy duty ball bearings); ball bearing tape tension pulleys, and light weight solid aluminum alloy separators—a Meadows Conversion means less vibration, low power consumption, uniform speed and twist, fewer ends down, and *no more cylinder trouble!* . . . We engineer and service each installation, manufacture all parts, and will be glad to have our representatives survey and estimate your frames without obligation, in their respective territories. *More than 8 million spindles equipped with Meadows Ball Bearing Tension Pulleys.*

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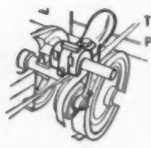

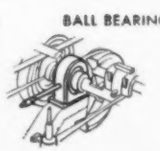

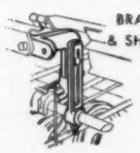

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"The three new opening rooms you furnished and the nine single-process pickers you installed are likewise most satisfactory and doing excellent work. The picker laps are clean, firm, and very even and contain virtually no neps. It is all very excellent machinery.

"Rest assured that when we are again in the market for new machinery, we shall be only too glad to figure with you on it."

The quotation herewith is from a letter recently received from a well known New York firm, operating a group of southern mills. This company's experience indicates what YOU may expect if you modernize with H & B textile machinery.

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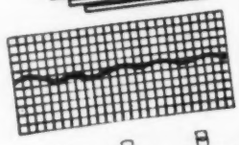
(name on request)

COMMENTS

Strippers in operation **445**

Obtained 77% increase in time between grindings

No difference in break of yarn



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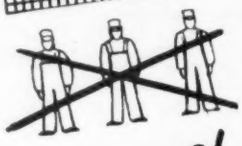


General comment on performance – "much pleased"

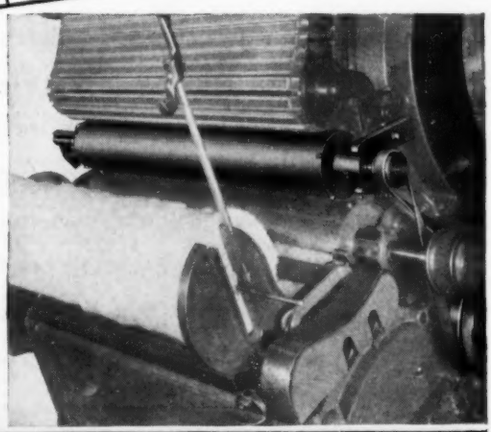
100%

Here's a case where it was obviously wise to SACO-LOWELLize!

. . . Easy to install,

on practically all revolving flat cards, the SACO-LOWELL Continuous Stripper *operates without added cost.* It recovers up to 2% additional fibre, reduces waste, nep count and lost production . . . makes a cleaner and more uniform sliver.

STATISTICS SHOW that this Continuous Card Stripper will liquidate its capital investment in about 14 to 16 months!



On request to our nearest Sales Office, we will send you literature giving full information.

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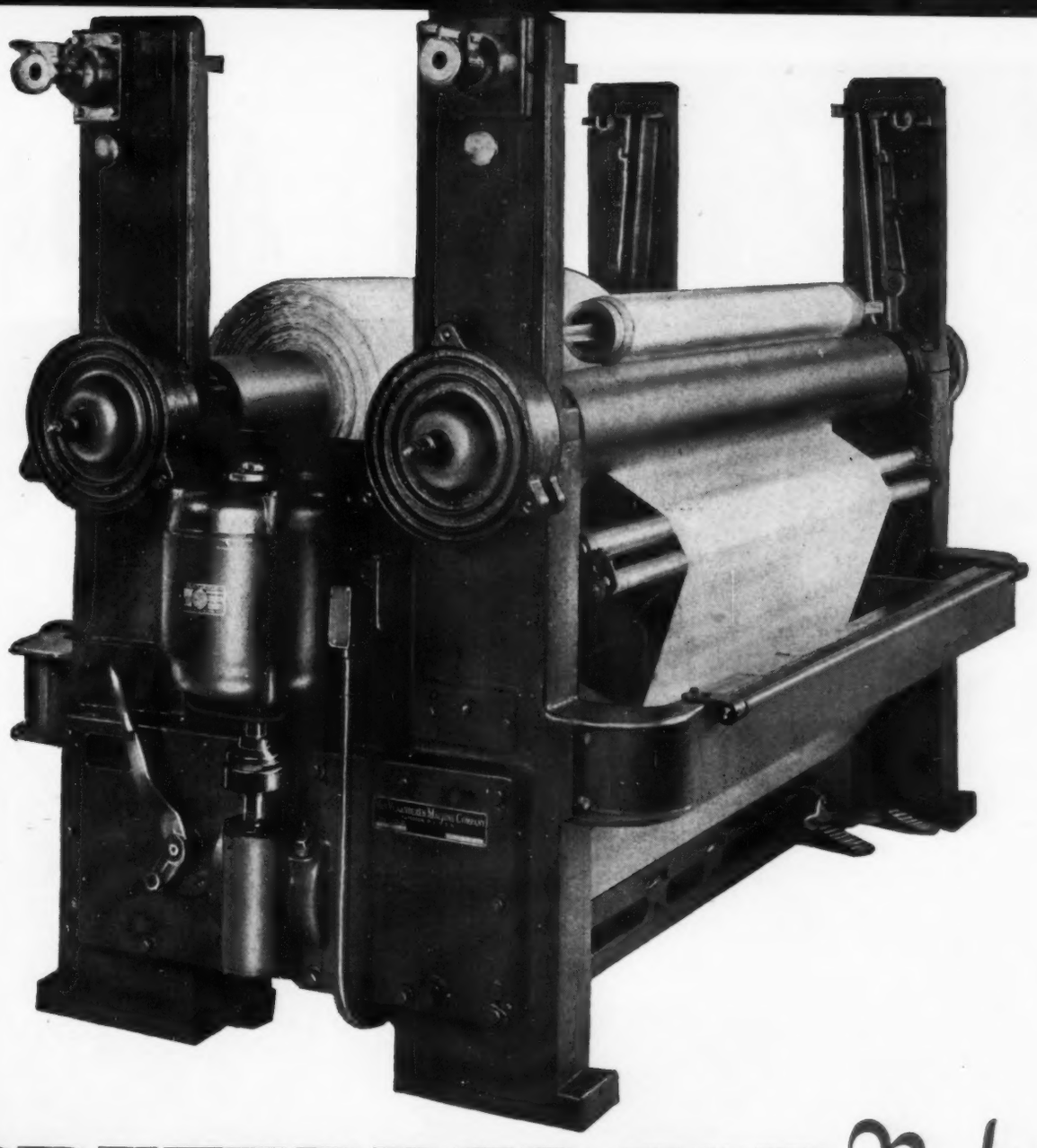

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* On conventional jigs the rolls are driven alternately and the tension increases with the speed as the take-up roll increases in size.

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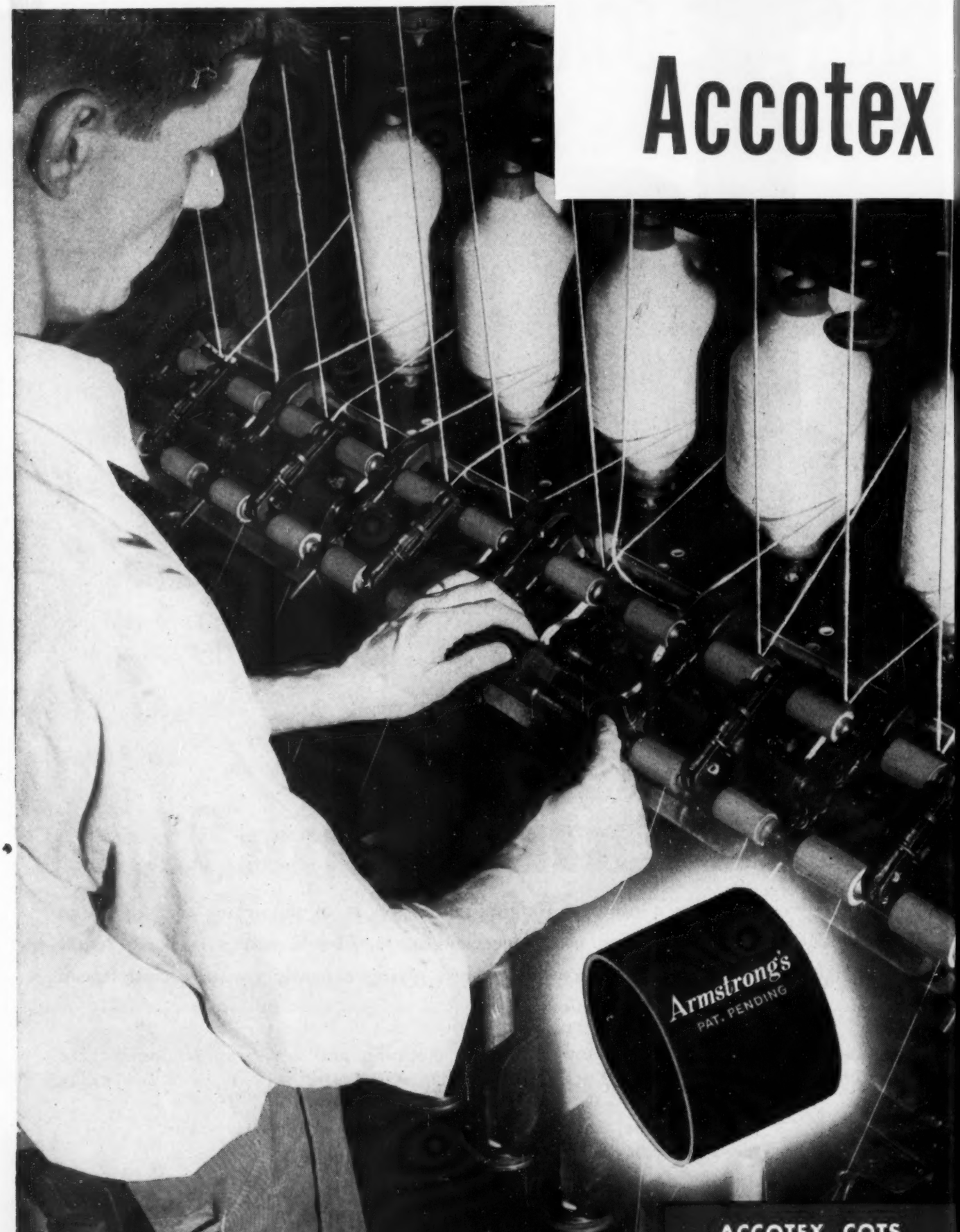
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After more than five years of service on mill frames many Accotex Aprons still spin quality yarn

With Accotex® Aprons on your frames, you get longer service—more than five years of spinning top-quality yarn in many mills. Downtime due to premature apron failure is virtually eliminated. With Accotex, aprons generally are replaced only during normal overhauling periods.

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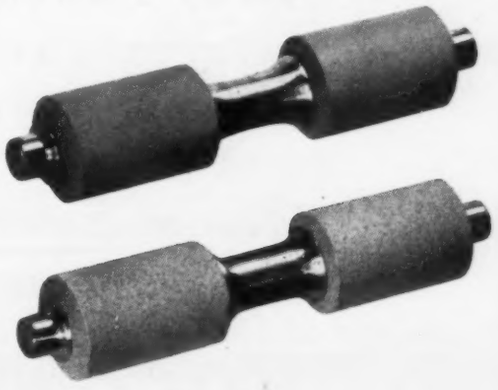

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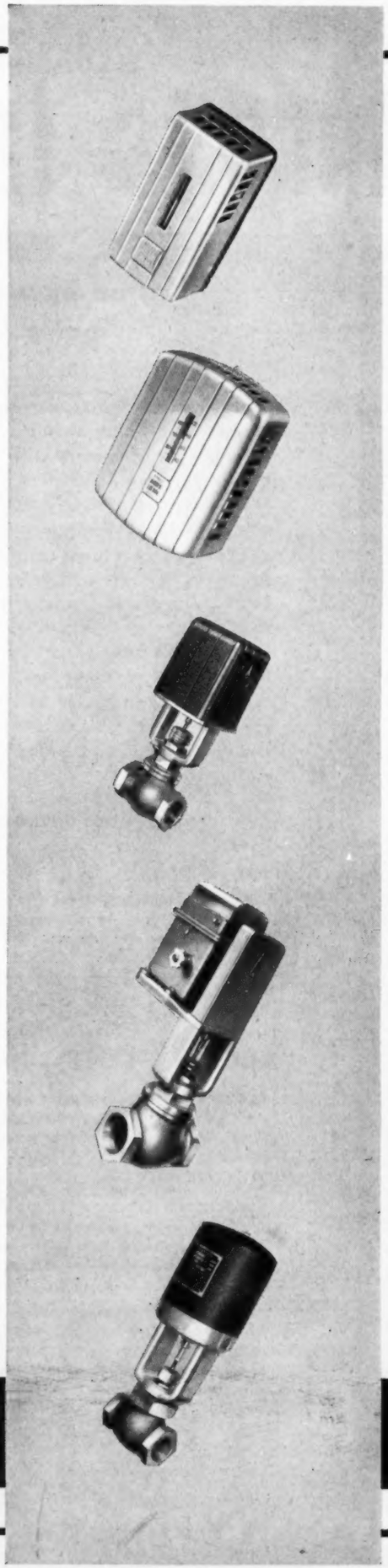

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No. 6 of a series

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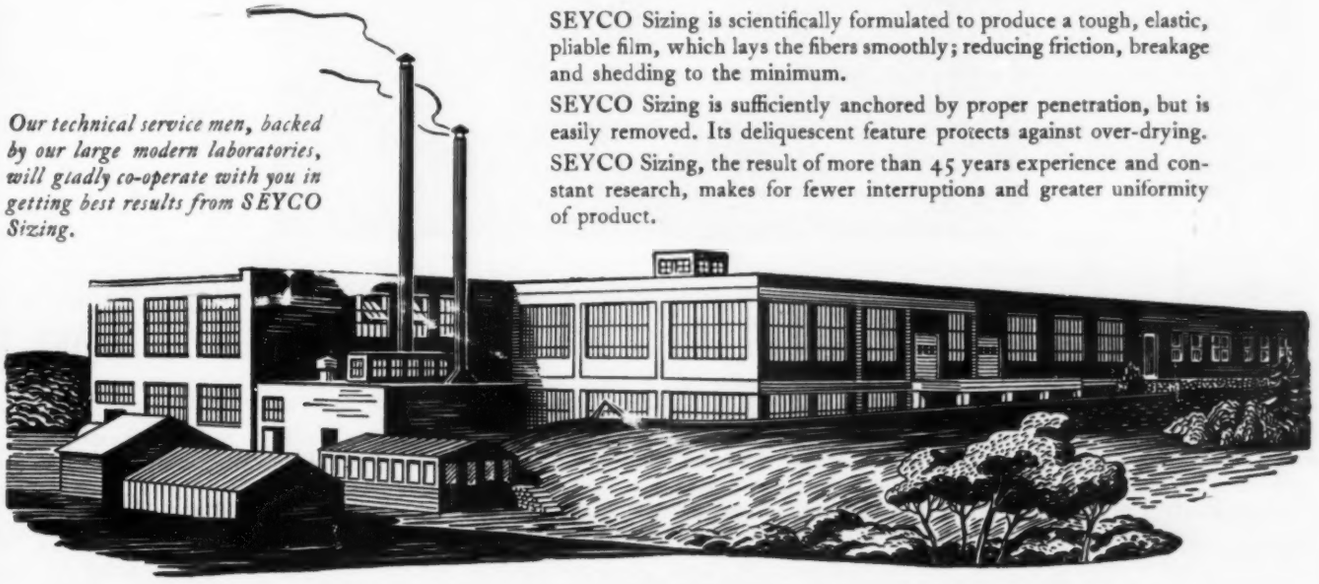
SEYCO Sizing, the result of more than 45 years experience and constant research, makes for fewer interruptions and greater uniformity of product.



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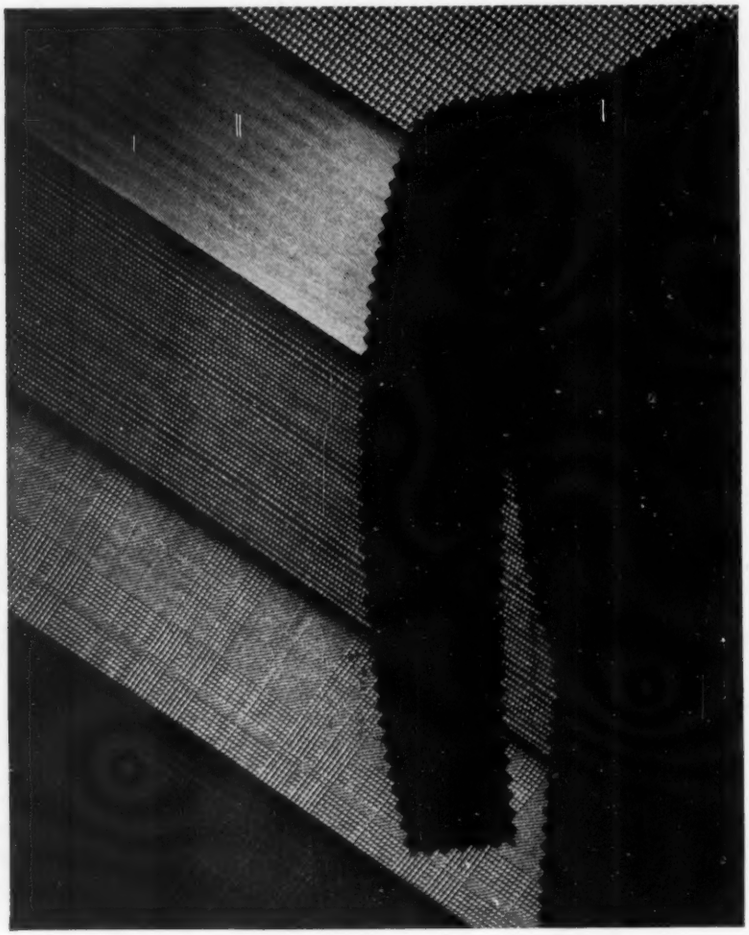

There's a rapidly growing number of men, and women too, who are completely sold on the rayon suit idea. Which means a year-round suit that's crisp, cool, moth-free and shape-retaining. And moreover, it's *good-looking* and *nicely-priced*. Suitings, containing a dominant proportion of Celanese* staple fiber, contribute largely to this fast-growing market. Don't miss your share of this profitable activity. Celanese Corporation of America, 180 Madison Avenue, New York 16.

The suitings shown here, top to bottom, are from: Burlington Mills, Wollman Mills, Dan River Mills, Colonial Mills, J. P. Stevens. Overlay fabric from Celanese Corporation of America.

Celanese*

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STAPLE FIBER

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A modern mill installation of new Whitin Model "E" Wool Spinning Frames.

WHITIN Wool Spinning Frames

Pay Big Dividends

Not for 1 Year - Not for 2 Years

. . . but YEAR AFTER YEAR

Many dividends to be derived from an installation of Whitin Model "E" large package wool spinning frames are obvious and accepted. Production is greater; yarn quality is better, with greater evenness and strength, bringing related savings in subsequent operations. These benefits are well known.

There is another dividend — an important one, too — which is often overlooked. It is the *long life*-and *low maintenance cost* of Whitin installations. We feel that an important customer of ours has covered this very well in a recent letter describing a modernization program he recently completed involving the moving of a number of our frames. We are permitted to quote as follows:

"They, of course, had to be completely dismantled with the exception of the heads, and re-erected. Now it should be pointed out that these frames had been running about four years on a three-shift, 7 days a week operation, namely 168 hours, which is the equivalent of approximately 17 years on a single shift, 40 hour basis.

To our complete surprise, not a single bearing, shaft, gear or roll had been impaired in the slightest. We even went so far as to examine the bottom bearings on the spindles and bolsters themselves. The frames had been operating on high twist yarn with a spindle speed of approximately 4900 turns per minute. After a continuous run of four years, with no shutdown whatsoever, we thought the condition of the machines was remarkable."

This is not an isolated case. Mill after mill has collected comparable dividends.

Write Today for descriptive literature on Whitin Model "E" Wool Spinning Frames

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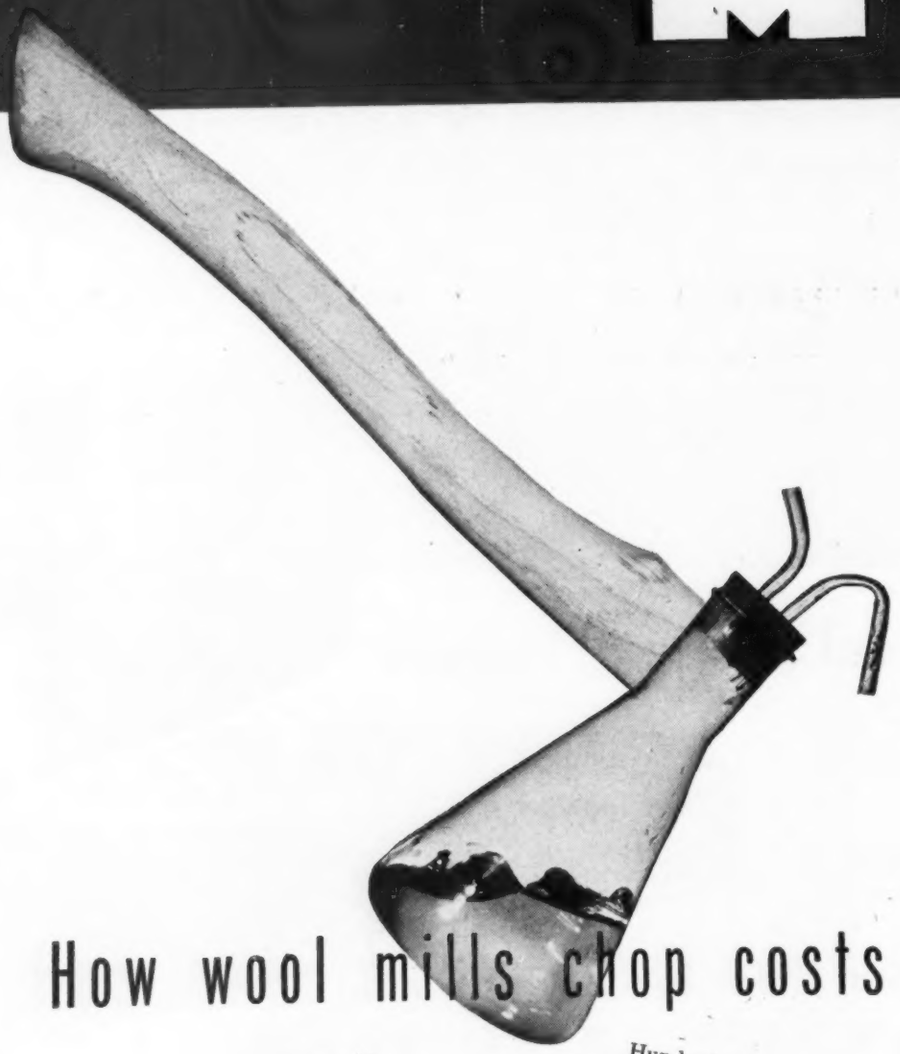
CHARLOTTE, N. C. • ATLANTA, GA.

FOR YOUR INFOR M ATION



How wool mills chop costs

Mill management is being called on to deliver profits even when sales volume is down. One plain way to do it is to pare operating costs, to produce less expensively and in less time. Many mill managers, and more every day, are realizing they can do this with a Monsanto chemical, Syton, because Syton gives from 10%-to-30% more yarn strength in woolen and worsted spinning.

Here is how Syton increases earnings:

1. By helping to produce more in less time.

Many mills . . . spinning carpet or knitting yarns for example . . . reduce twist with Syton and hence boost production. Other mills report fewer ends down during spinning and weaving . . . better roping condensation, reduced fly and card waste. Production costs go down, savings up.

2. By improving the product

Many mills find they can spin blends hitherto impossible. Almost all mills report that Syton enables them to stock to a finer count. Hundreds of woolen and worsted spinners . . . more every day . . . are proving that Syton is a practical produ speeder . . . and a money maker for management.

Certainly that's reason enough to find out how Syton can work in your own mill. We're ready to give you full details about Syton and our technicians are ready to help you right at your own plant.

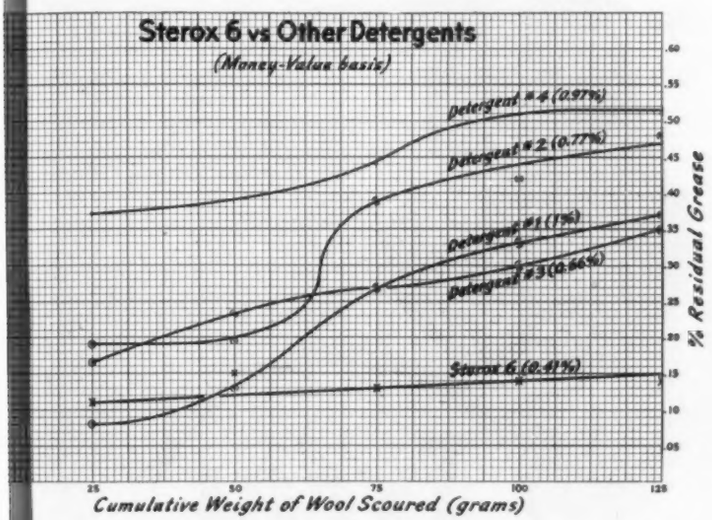
New, free booklets describe your savings with Syton

Four newly completed booklets describe in detail the uses of Syton for more efficient, and *economical* woolen and worsted spinning. Check one or all you wish, and get them through the handy coupon.

For woolen spinners: *"Syton for stronger, more uniform yarns."*
For worsted spinners: *"Syton for worsted spinning: More uniform yarns, increased strength, yarns spun closer to count.*
For carpet makers: *"Syton for loftier, 'more blooming' yarns."*
For Commission spinners: *"Syton for faster spinning of all type*

STEROX 6

a new detergent for wool scouring



Sterox 6, a new detergent which Monsanto Chemical Company is introducing to the textile industry, has demonstrated high efficiency in the removal of oil and grease from wool fibers.

This contribution, the result of extensive research on synthetic detergents, wetting agents and cleaning compounds, is recommended for effective wool scouring.

Sterox 6 is a detergent that varies greatly in chemical composition and action from any other detergent.

Test work shows that Sterox 6 is outstanding, not only for removal of oil and grease, but also for its ability to hold them in suspension without redeposition on the fiber.

Further tests show that Sterox 6 is more efficient than other detergents on a money-value comparison.

For full information on Sterox 6, mark the handy coupon.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . .
WHICH SERVES MANKIND

STYMER "S" acetate size

eliminates GEL problem

Enthusiastic mill owners everywhere report that Stymer "S" can be left in size-boxes overnight . . . that it does not "set" when cold, causing lines to clog. It eliminates messy clean-up jobs . . . saves both time and materials.

Stymer "S" is a new synthetic sizing agent whose uniformity and quality are strictly controlled. In addition to its non-gel properties, Stymer "S":

1. Increases plant efficiency.
2. Gives warp a superior finish over a wide range of humidities and temperatures.
3. Reduces static electricity.
4. Is non-gumming, non-thickening, non-mildewing; will not set or sour.
5. Minimizes dirty knot problems. Stymer's detergent power removes dirt picked up by knots.
6. Forms abrasive-resistant film without undue stiffening.
7. Is easy to dissolve from the woven fabric in warm water containing a mild detergent.

New Stymer Booklet

A new, free booklet on Stymer is available to you through the handy coupon. Send today for the booklet: "Stymer 'S', the Synthetic Size for improved Slashing of Synthetic Warps."

MONSANTO CHEMICAL COMPANY, Textile Chemicals Department
Desk TJT 17, 140 Federal Street, Boston 10, Mass.

Please send me: New Syton booklet ☐ for spinners, ☐ for worsted spinn
☐ carpet makers, ☐ commission spinners;
☐ New Stymer booklet; ☐ full information on Sterox 6.

Name _____ Title _____

Company _____

Address _____

City _____ Zone _____ State _____

*UNIFORMITY

Under all conditions the proved performance of Tycol lubricants more than meets their recommended service.

Rigidly controlled and tested during manufacture . . . and refined from the highest grade crudes, Tycol oils and greases are known for their *UNIFORMITY within each classification — from the first drum to the last.

This unvarying high quality, plus the scope of the line, accounts for Tycol's wide acceptance by industry interested in maximum production . . . top efficiency . . . lowest operating cost.

Whatever your lubrication need, let a Tide Water Associated engineer help you select the one suited for your particular need. Call, write or wire your nearest Tide Water Associated office for full details.

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INDUSTRIAL LUBRICANTS

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TIDE WATER ASSOCIATED OIL COMPANY

17 BATTERY PLACE · NEW YORK 4, N.Y.

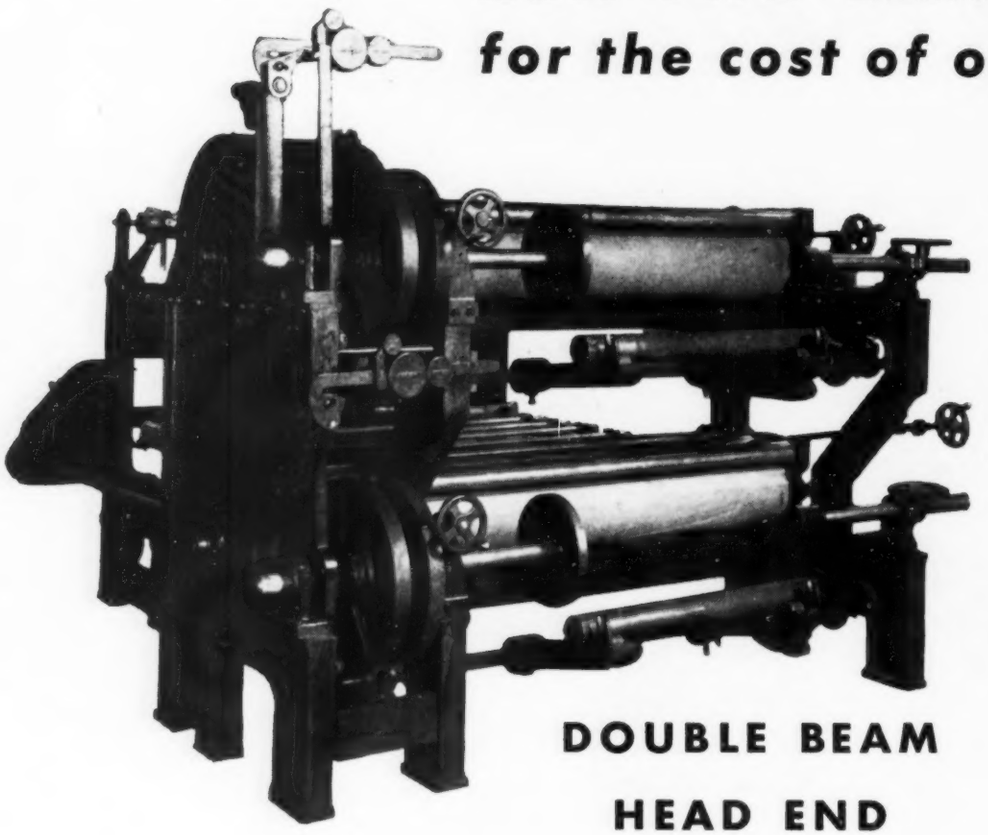
*LEARN WHAT THIS PRODUCT CHARACTERISTIC MEANS TO YOU — READ "LUBRICANIA"

This informative handbook, "Tide Water Associated Lubricania," gives clear, concise descriptions of the basic tests used to determine important properties of oils and greases. For your free copy, write to Tide Water Associated Oil Company, 17 Battery Place, New York 4, N. Y.

REFINERS AND MARKETERS OF VEEDOL — THE WORLD'S MOST FAMOUS MOTOR OIL

COLOR SELLS TEXTILES
(Samples shown are blended yarn fabrics.)
Only the best in designing will sell a fabric today,
and only the best in yarn dyeing will keep it sold.
Franklin Process
Largest Package Dyers in the World
Providence Philadelphia Greenville Chattanooga
New York Representative – 40 Worth Street

RUN TWO BEAMS
for the cost of one



DOUBLE BEAM
HEAD END

W.P.F.&M.
MANUFACTURERS OF:

Conventional Slasher Machinery

Slasher Modernization Equipment

Size Boxes, Kettles and Special Equipment

Special Textile Machinery and Repair Parts

Loom Beam, Barrels and Beam Heads

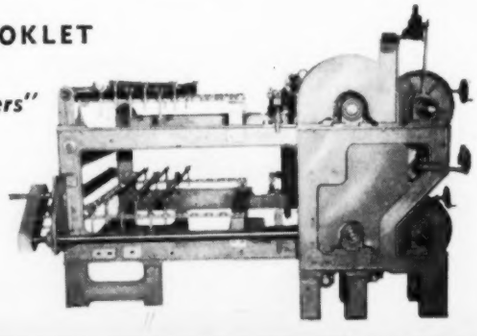
This unit is designed to fully utilize the drying capacity of your slasher cylinders. It is particularly applicable when it's necessary to run light sets on standard width slashers.

Two loom beams, up to 26″ diameter and 44″ between heads, can be run simultaneously—almost doubling the output of your present slasher equipment. Beams, rigidly supported on a double frame, are driven by lever friction. All journals are equipped with ball bearings for smoother, more efficient operation.

WRITE FOR FREE BOOKLET

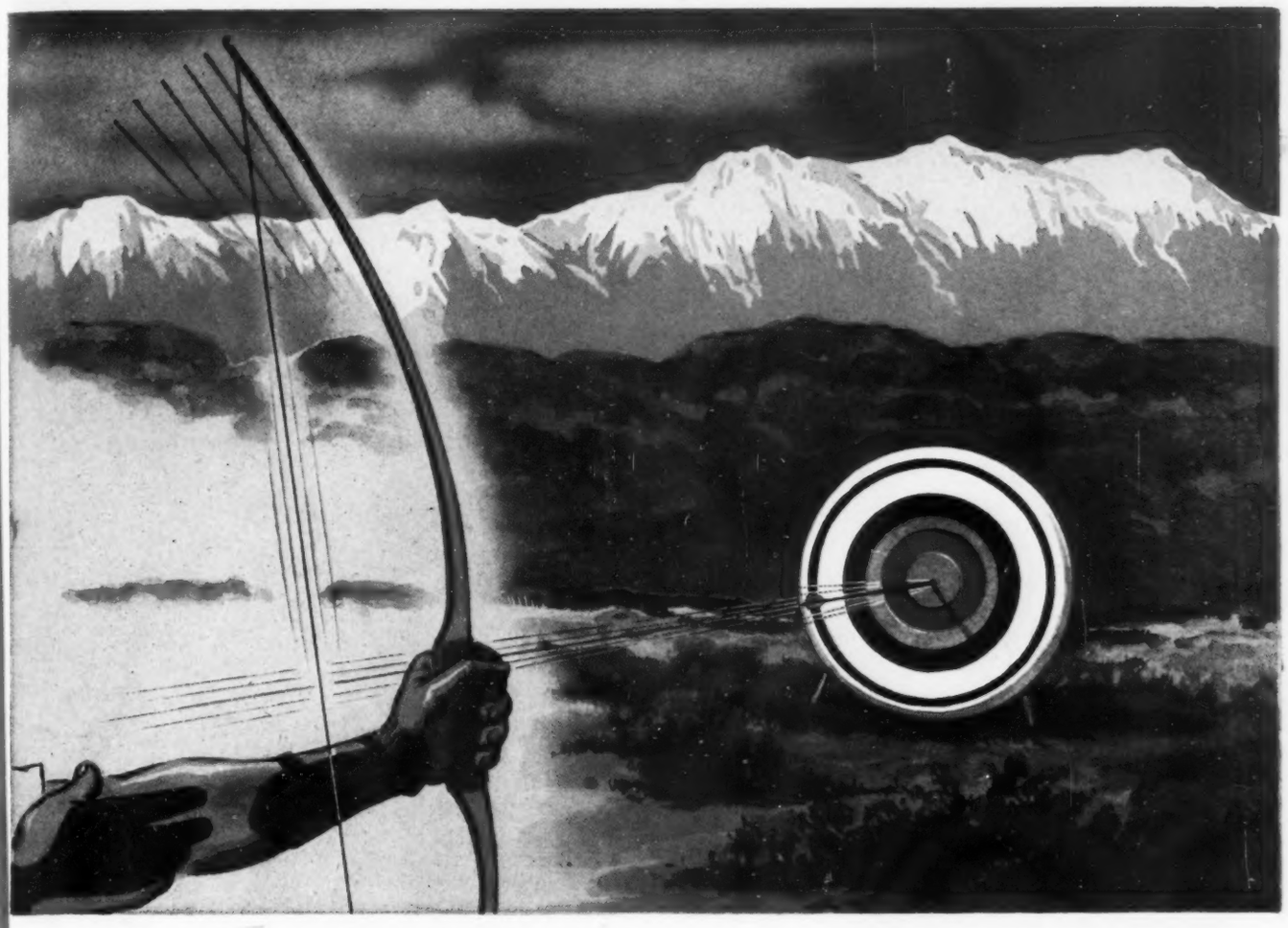
"Cotton Slashers"

It describes the above unit and other special Slasher equipment produced by W.P.F.&M.



Manufactured by

WEST POINT FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA



FLEXIBILITY SCORES

It's the flexibility and resilience of the bow that sends the arrow straight to the mark, and gives you a bull's eye.

And it's flexibility in a de-sizing agent that makes a difficult finishing job easy. That's the reason bleachers and dyers chalk up a high score for Diastafor brand de-sizing agent—Type L.

The variables that are present with almost every lot of goods coming to your mill bring problems to the men in charge of finishing operations that demand the utmost in skill and equipment.

In dealing with these variables they know the special value of an all-purpose de-sizing agent like Diastafor—Type L, which works well under so many different conditions.

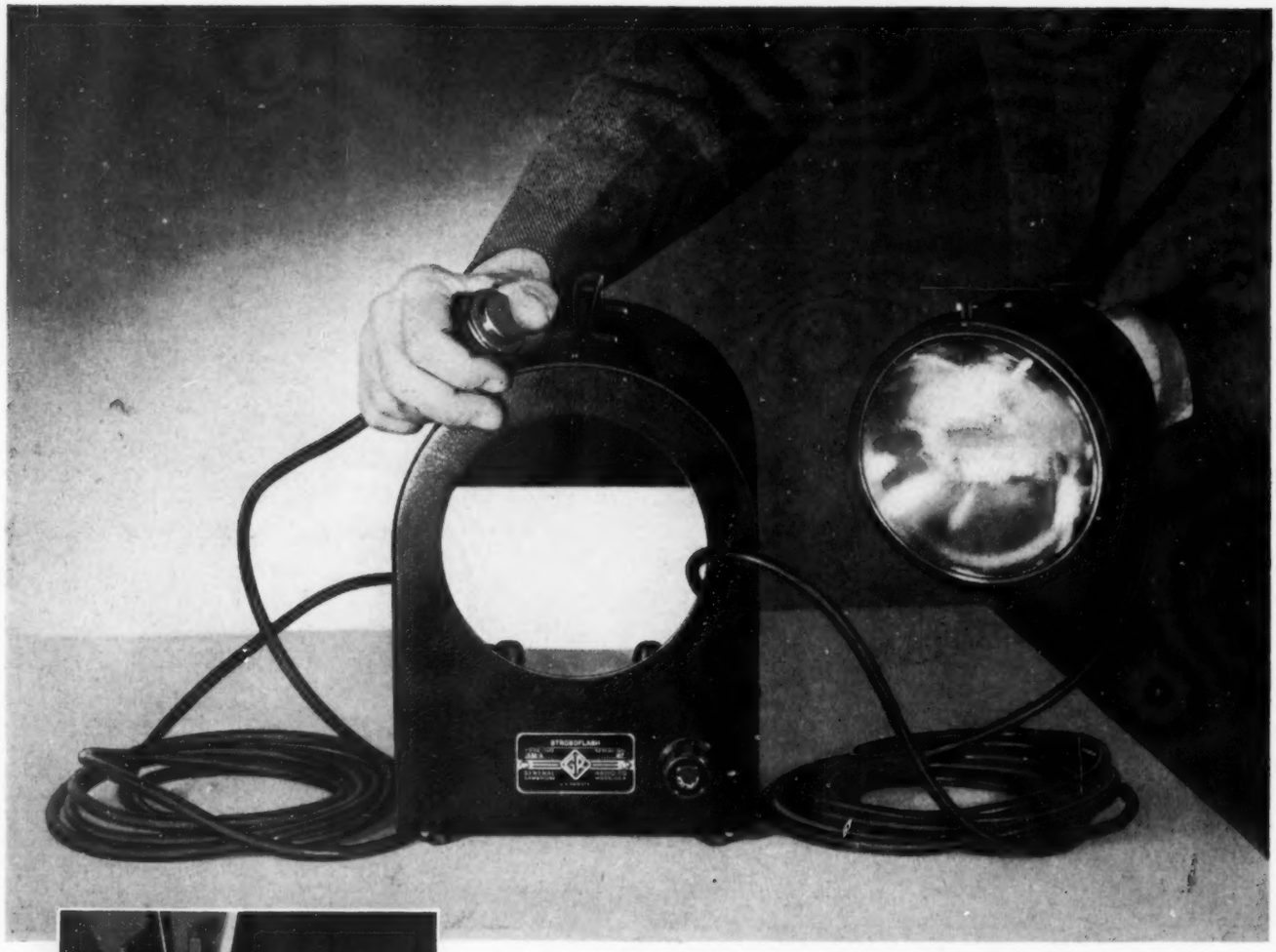
Diastafor—Type L helps you score a bull's eye, even on your hardest lots, because of its workability in a wide range of temperatures. It will give good results in a wide pH range as well.

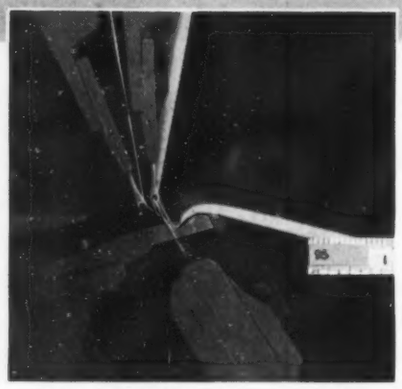
Diastafor is easy to use, it's economical, it's dependable. It will give you a fine "hand" whether you are working with cottons, rayons or mixed goods. It is kind to your fabrics, too. Tensile strength is never impaired. Diastafor gives you the finish you need for even dyeing, with no streaks or blemishes. It works well in the continuous process.

Our sales and technical staffs are always glad to give special assistance on de-sizing problems when their services can be helpful. Write Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED





Single-flash STROBOLUME picture of a warp knitter (side-view)

The STROBOLUME normally is housed in the power-supply case. Complete, it weighs only 18½ pounds. The sealed-beam lamp and its case are removable from the supply assembly for use at the end of a 10-foot cable. The lamp housing is equipped with a standard tripod socket.

TYPE 1532-A STROBOLUME . . . $225.00

TYPE 631-BS18 STROBOTAC
(Special, with speed range of 60 to 14,400 rpm.) **$170.00**

and *NOW* . . . An EXTRA-HIGH-INTENSITY STROBOSCOPE for S-l-o-w Motion Textile Machinery

ESPECIALLY designed for the textile field, the new Type 1532-A STROBOLUME furnishes just the right light intensity and slow flashing rate for either observing or photographing loom shuttle operation, warp knitters and the many other s-l-o-w speed textile machines.

The STROBOLUME gives an intense light with a flash duration of only *ten millionths* of a second. It can be operated in several ways. For single-flash pictures, taken at random, it is equipped with a cord and push-button switch to fire the light in a single flash. For multiple flash pictures or visual observation, a contactor on any rotating shaft of the machine will supply flashes synchronized to 1200 rpm.

A special slow-speed STROBOTAC is available for use with the STROBOLUME to fire the latter at any speed between 60 and 1200 rpm. This special STROBOTAC, alone, has a speed range of 60 to 14,400 rpm.

The new STROBOLUME opens up many new possibilities in the scientific and most efficient operation, maintenance and design of slow-speed textile equipment. If you have ANY motion-study problem in the use or modification of your machines, the STROBOLUME may be an invaluable aide.

This equipment is sold directly from our factory. We do not have any travelling salesmen. May we send you literature?

WRITE FOR THE STROBOLUME BULLETIN

GENERAL RADIO COMPANY Cambridge 39, Massachusetts

90 West St., New York 6 920 S. Michigan Ave., Chicago 5 1000 N. Seward St., Los Angeles 38

Maguire Service to Manufacturers and Selling Agents eliminates credit losses - makes cash available as shipments are made and permits larger sales volume without increased capital investment.

WRITE TODAY FOR DETAILS

John P. Maguire & Company
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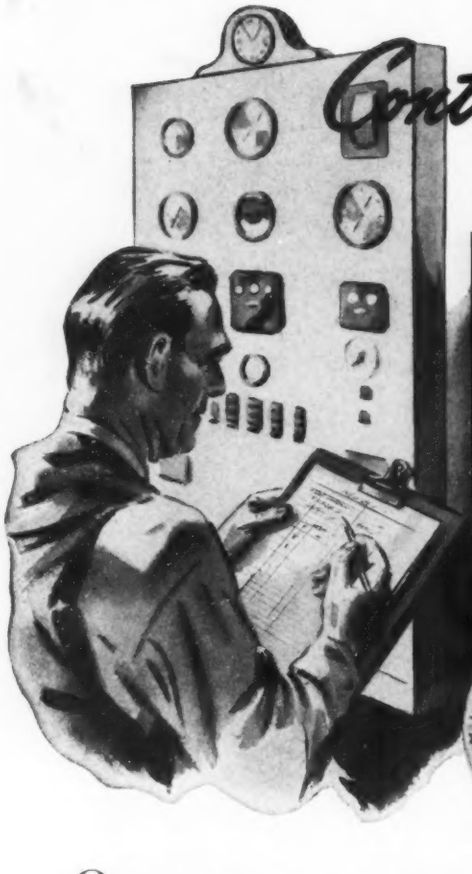
Check Credits · Cash Sales · Absorb Credit Losses



Continuing Thermal Research

NOW BRINGS YOU

GREATER HEAT TRANSFER CAPACITIES IN SMALLER, MORE COMPACT UNITS

OUT of the engineering department and research laboratory at Ross comes a steady flow of new manufacturing techniques and design improvements achieving continually higher levels of heat transfer efficiency and lower levels of cost per B. T. U.

Already widely known to primary equipment manufacturers and users are the tradition-shattering developments of the now famous Ross "BCF" line of exchangers. Now, of equal importance to practically every industry, comes news of the design changes to another of industry's favorites, the long established "CP" Exchanger — *another direct result of recent conclusions reached by continuing Ross thermal research.*

Having successfully accomplished the means of "cutting to the bone" ineffective areas, bypassing, eddies and excessive pressure drops, Ross now provides in the various sizes comprising the "CP" Exchanger line, *a greater heat transfer surface in a smaller, more compact unit.*

. . . and backing up these noteworthy performance developments are new manufacturing techniques as applied to the customary Ross mass production system of standardized parts manufacture. Closest practicable clearances between tubes and baffle holes, baffles and shell, and bundle and shell—*absolutely vital to complete, fully effective use of heat transfer surface*—are consistently and uniformly produced by new, precision, mass quantity manufacturing methods.

So, added to "CP" Exchangers' greatest asset — the custom assembly from mass produced standard parts — you now have more compact units embodying greater heat transfer capacity, to meet your individual requirements at lowest cost.

Ross Heater & Mfg. Co., Inc., Division of American Radiator & Standard Sanitary Corp., 1461 West Ave., Buffalo 13, N. Y. In Canada, Horton Steel Works, Ltd., Fort Erie, Ontario.

★ **DATA BACKS UP ALL CLAIMS: To find out how smaller "CP" clearances can make a high percentage difference in your heat transfer costs, write Ross today.**

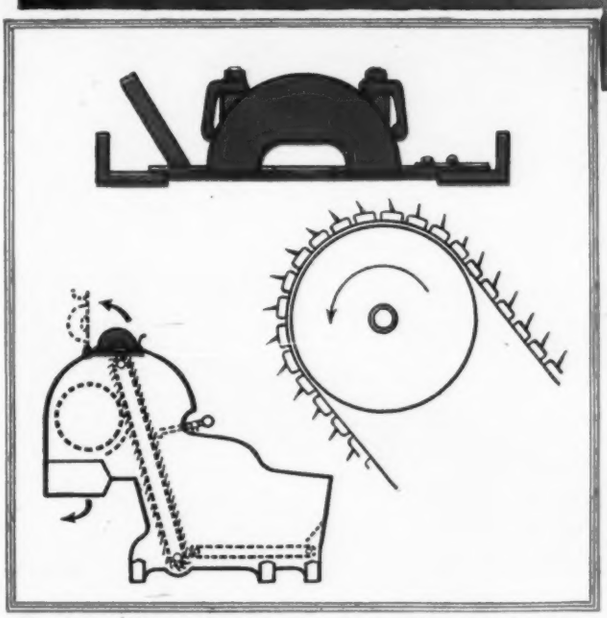
ROSS "CP" EXCHANGERS

Serving home and industry

AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILER • ROSS HEATER • TONAWANDA IRON

Eriez Magnets give more efficient and simplified MAGNETIC PROTECTION

1. Supporting angle iron.
2. Magnetic Separator in working position.
3. Magnetic Separator swung up for cleaning.
4. Handle for swinging back hinged Magnetic Separator.



The Eriez Magnetic Separator, shown above, is built for suspension over spiked apron feeders. This application assures superior cleaning results because the magnet is operating at a point where materials are opened and traveling at low speeds. Eriez Magnetic separation is simple. As material is conveyed to the top of the apron, it passes into the magnetic field where tramp iron is removed. Eriez magnets can be built any size required in order to fit existing or new machinery.

POSITIVE protection from fires and machinery damage caused by tramp iron is provided when Eriez non-electric permanent magnetic separators are installed in textile processing lines. The Eriez magnet is simple, requires no maintenance other than cleaning of collected trash. It is easily understood, maintained and installed by ordinary labor. There is no operating cost . . . The Eriez is light in weight, extremely flexible in design and economical in cost. It presents no additional fire hazard of its own to the process protected. The magnetic strength of Eriez Magnets does not diminish. It is permanent—the power is always there. No chance of electrical failure or human forgetfulness. Eriez Non-Electric Permanent Magnets are effective in removing Tramp Iron from all types of fibers. Submit your tramp iron removal problems to us, we will be glad to help in their solution.

TI-5

Please send bulletin No. 104A and the following:

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name.....

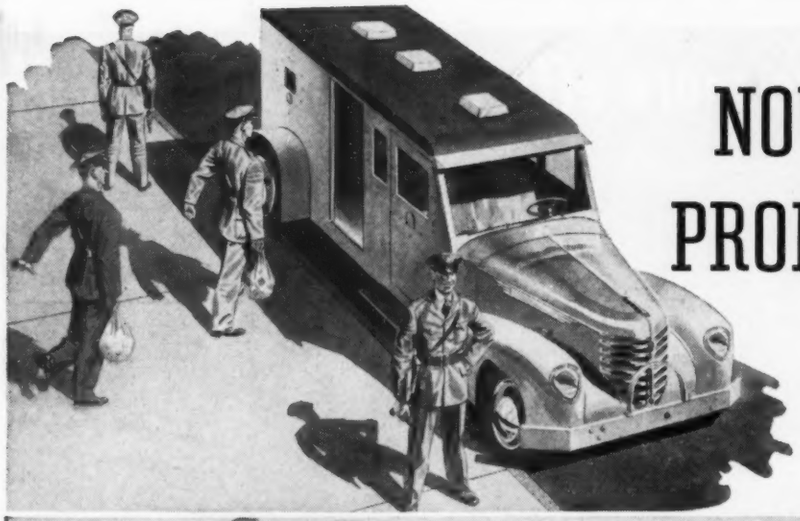
Address.....City.....State.....

Pioneer of **PERMANENT** *Magnetic Separation*

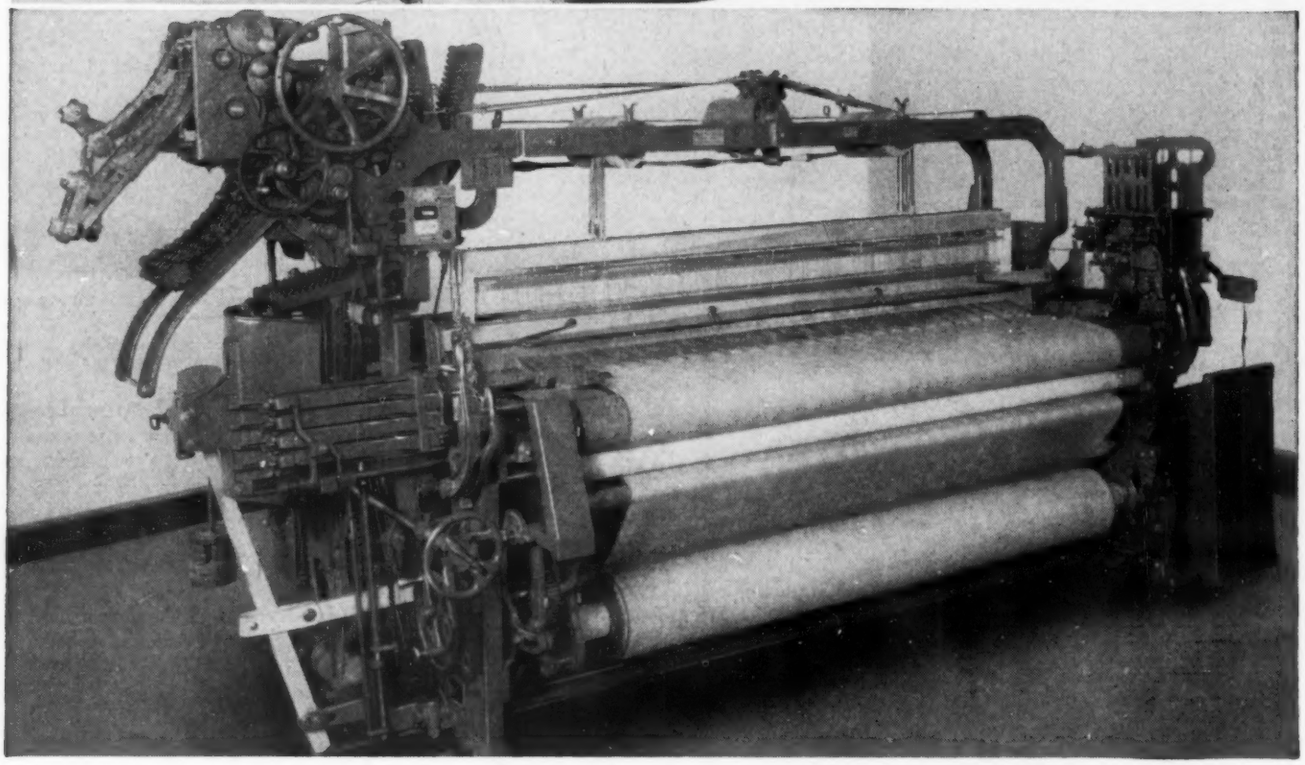
● *When It's Magnetic Protection . . . See Eriez First*

ERIEZ MANUFACTURING COMPANY

1501 East 12th St. • ERIE, PA.



NOW...GREATER PROFIT-PROTECTION



from these ***NEW C&K W-3 ALL-PURPOSE LOOMS***

Swiftly shifting market conditions find mills thoroughly fortified, profit-wise, when their weave rooms are equipped with an adequate percentage of C&K's new W-3 All-Purpose Looms. *No other weaving machinery can give you such profit-protection:*

1: 3-WAY CONVERTIBILITY: Complete conversion to a 4 x 2 box automatic bobbin-changing loom for filling mixing . . . from either a 4 x 1 automatic bobbin-changing loom or a 4 x 4 box non-automatic for pick-and-pick work.

2: NEW ALL-PURPOSE TAKE-UP: Provides adequate but gentle tension. No steel surfacing or sandpaper to damage delicate warp or filling.

3: FULL AUTOMATIC LET-OFF: Relieves the sudden strains of beat-up and shedding, while maintaining uniform tension on the warp, through the medium of the oscillating back roll. This results in minimum warp breakage, less mending, and higher quality of fabric.

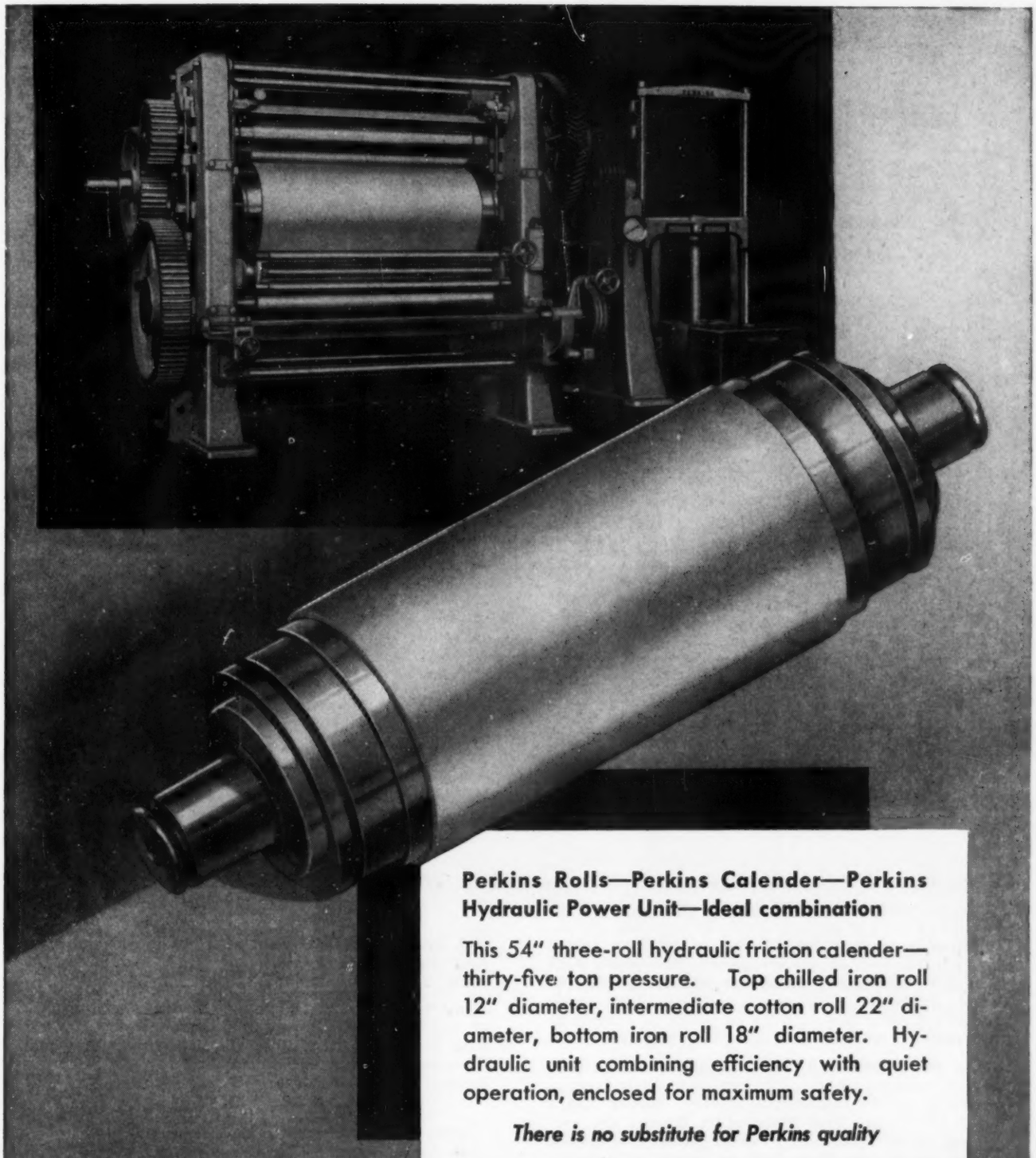
These are some of the reasons why these new C&K W-3 All-Purpose Looms will give you the best fabrics . . . anything from finest worsteds to heaviest woolens or blended fabrics . . . at a wider margin of profit. Write.

CROMPTON & KNOWLES LOOM WORKS • Worcester 1, Mass.

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. • CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

C&K — A Loom for Every Woven Fabric

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics.



Perkins Rolls—Perkins Calender—Perkins Hydraulic Power Unit—Ideal combination

This 54" three-roll hydraulic friction calender—thirty-five ton pressure. Top chilled iron roll 12" diameter, intermediate cotton roll 22" diameter, bottom iron roll 18" diameter. Hydraulic unit combining efficiency with quiet operation, enclosed for maximum safety.

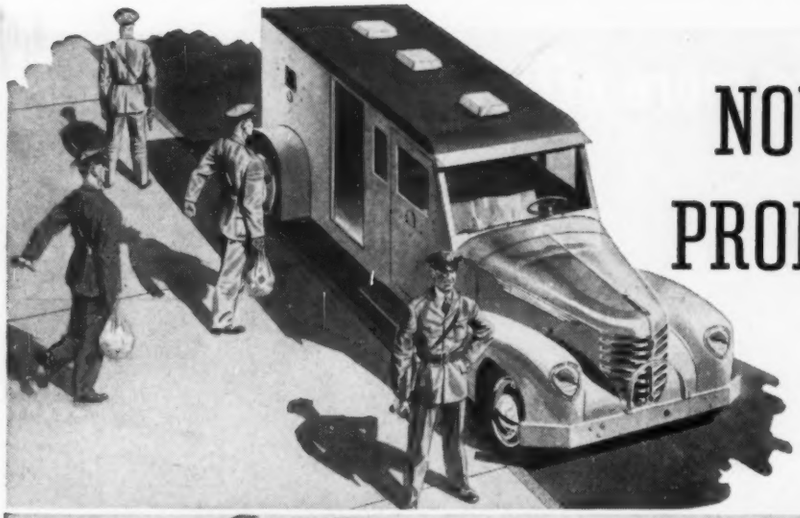
There is no substitute for Perkins quality

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD



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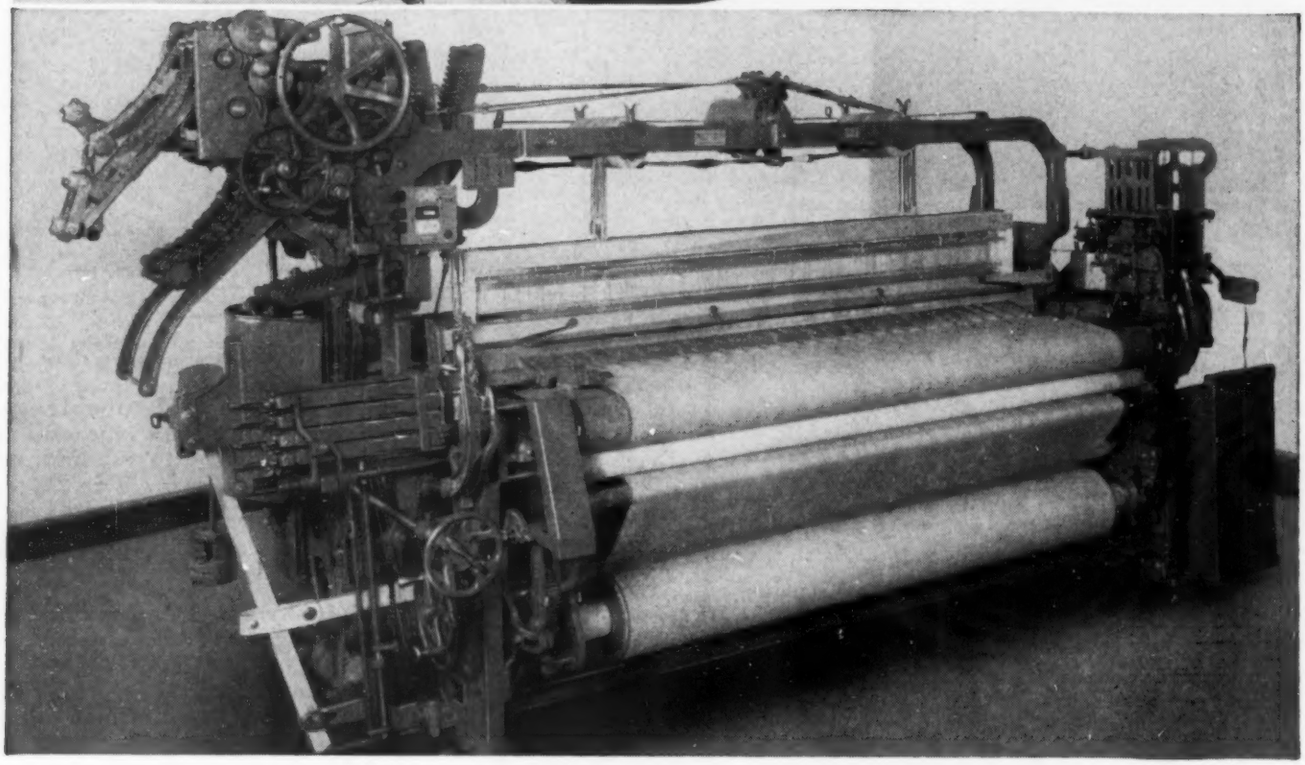

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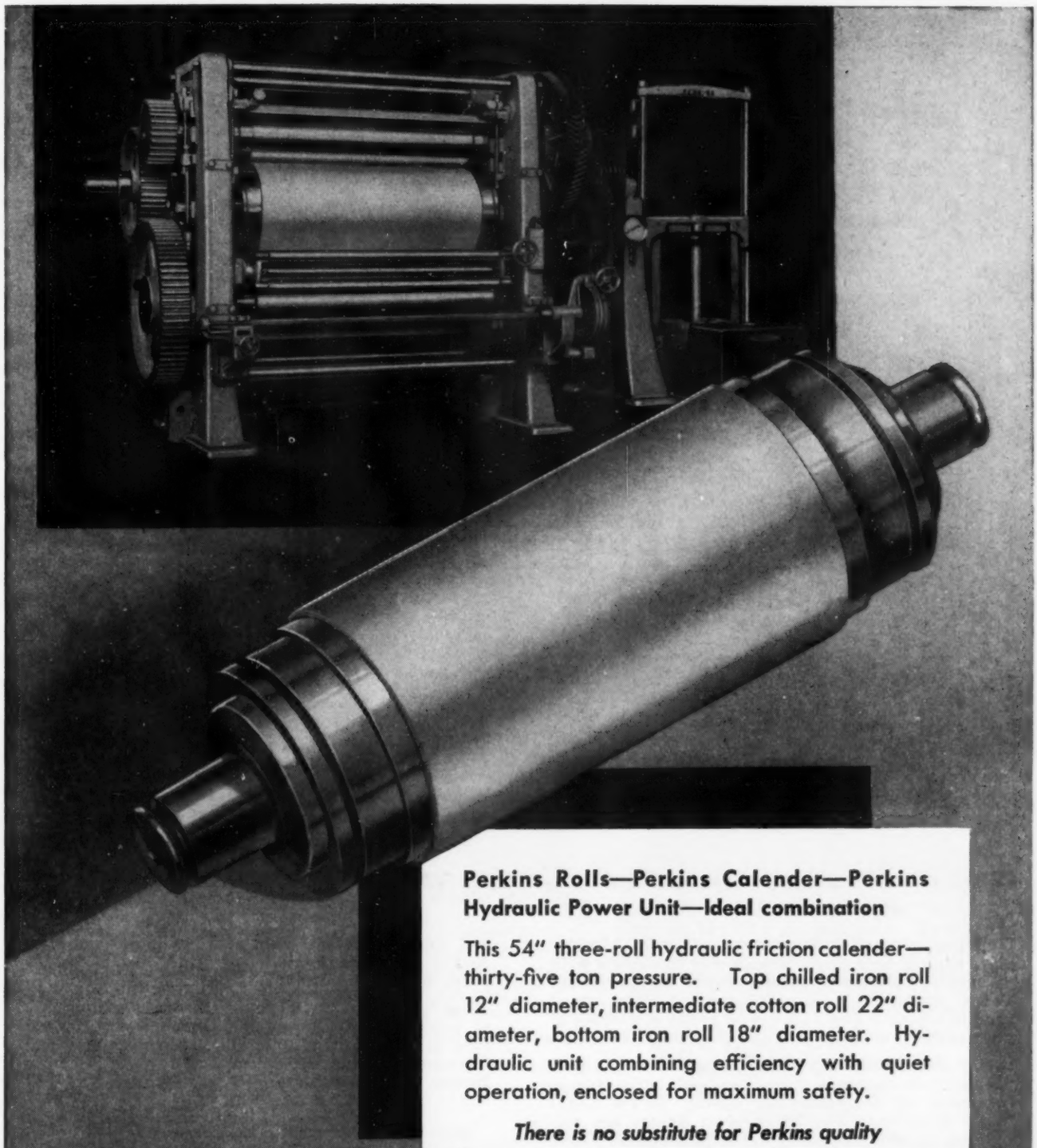

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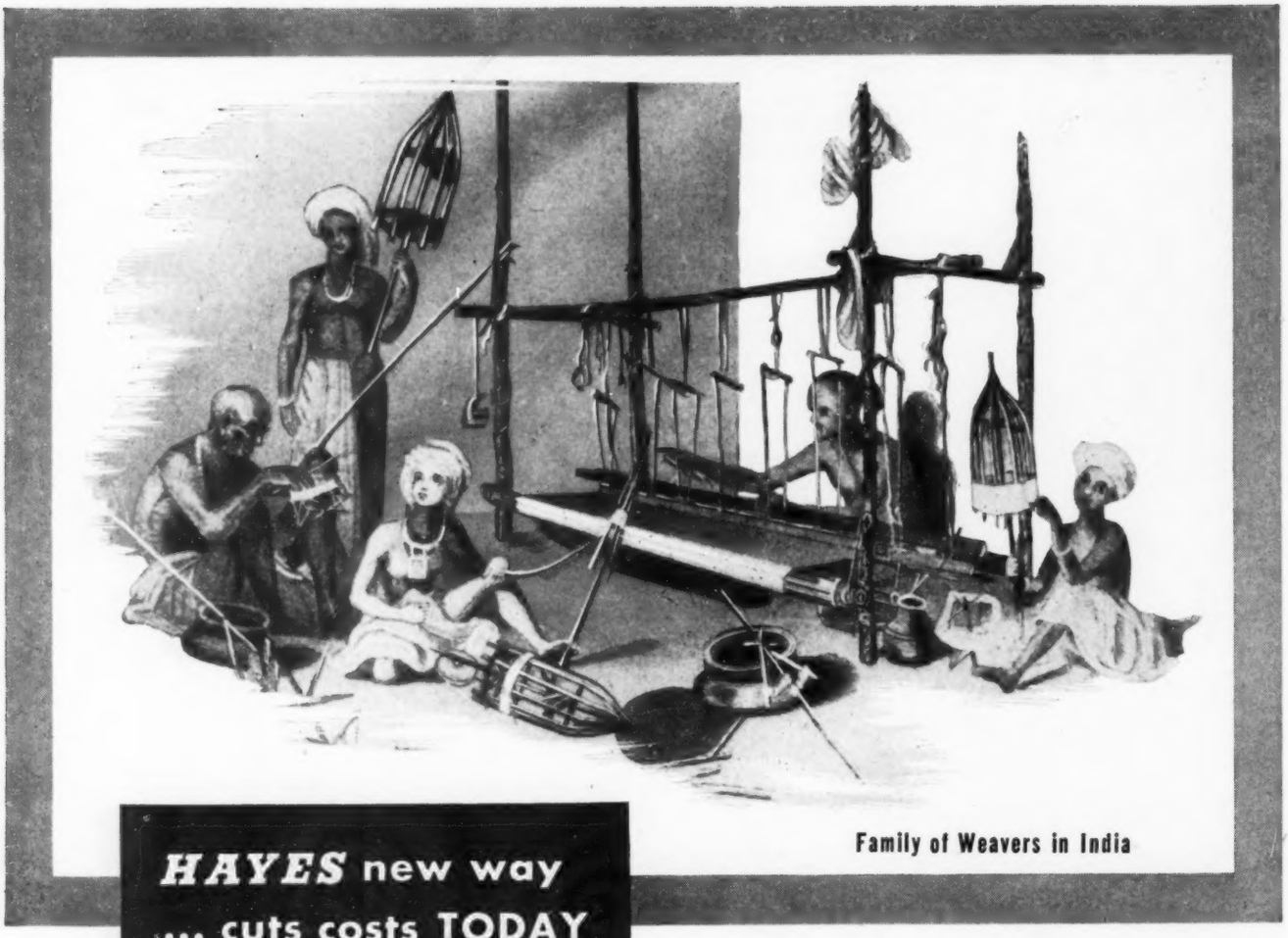


Family of Weavers in India

HAYES new way
... cuts costs TODAY

You'll Produce at Lower Costs with Light Metal Beams

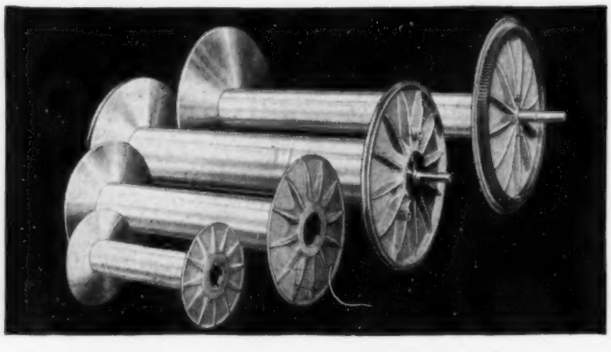
Weaving in ancient India was a family affair—slow, tedious and expensive, as any operation with primitive, inefficient machinery is bound to be. Today American mills with modern, high-speed production turn out millions of yards of fabrics at low cost.

In the past wood and cast iron has been the prevailing material used for beams with little change in design of workmanship. Today, Hayes Light Metal Aluminum and Magnesium Beams are recognized as an outstanding aid to production. These beams weigh less than half as much as conventional beams . . . providing substantial savings in shipping and handling costs.

Because they are accurately built and perfectly balanced . . . they rotate smoothly and uniformly . . . permit higher machine speeds with fewer rejects. The satin-smooth, highly polished, flanges and barrels cannot snag, rust, chip nor splinter. And even when loaded with fine denier acetate yarn, heads have the least possible deflection.

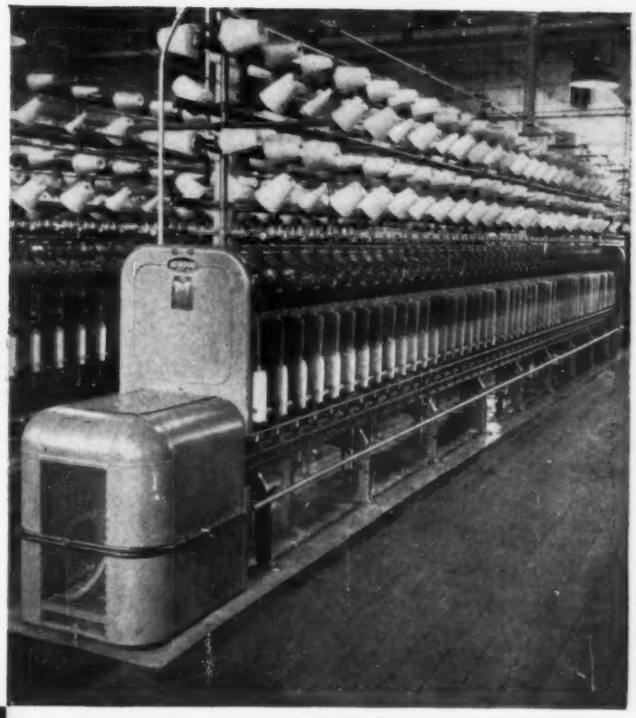
They will perform efficiently through many years of production with low maintenance cost. You'll find it well worth while to investigate the cost lowering aspects of Hayes Light Metal Section Beams, Loom Beams and Tricot Beams.

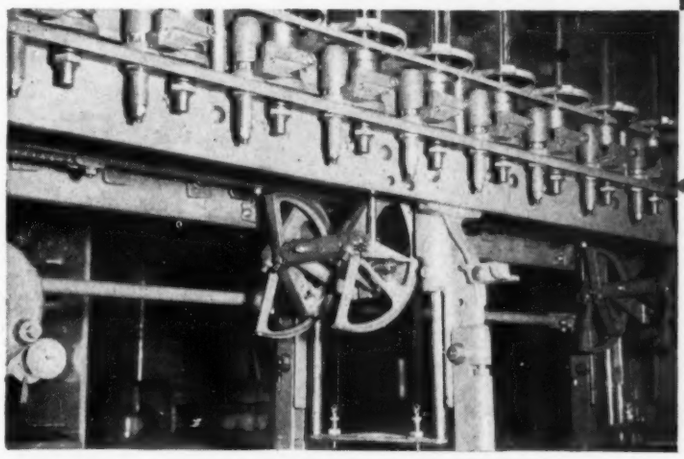
Write or wire for complete information on Loom Beams, Section Beams and Tricot Beams. Ask for Catalog 1-21.



HAYES
INDUSTRIES, INC.
HOME OFFICE: Jackson, Michigan

It Twists
NATURAL AND SYNTHETIC YARNS





The sturdy lifter rods, designed with oilless metal bushings, assure smooth ring rail traverse and require a minimum of maintenance. One long-wearing endless, lapless belt for all spindles, eliminates sewing or tying of tapes. Automatic stop motion for each end and ply prevents roller laps and allows piecing up of single ends. Knee brakes are eliminated.

The Atwood Model 10 Ring Twister is a completely modern machine, sturdily constructed, and designed to produce plied yarns of cotton, woolen and worsted; spun rayon, filament rayon, nylon and combination yarns. Around a basic design that has proved highly successful over the years, the machine has been redesigned for smoother running, reduction in maintenance, and greater ease of operation.

With a Sharp Eye on Costs

UNIVERSAL WINDING COMPANY

ATWOOD DIVISION
P. O. BOX 1605, PROVIDENCE 1, R. I.

Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

Model 10 *automatic stop motion for each end and ply*

One of a series *of messages to help you increase your understanding of business paper advertising, and its effect on your job.*

Who pays your company's advertising bill ?

PEOPLE WHO REGARD advertising as an economic waste are fond of pointing out that it's the *customer* who pays the bill.

And they are right.

The customer also pays for your power supply, your production tools, your plant maintenance, your salaries. All these are figured into the price of your product, along with the cost of your advertising.

Does this mean that the customer pays *more* for your product because it is advertised? Not at all. No more than he pays anything "extra" for the machinery on your production line!

The truth is, your production tools enable you to *reduce* your manufacturing cost-per-unit — and hence your price to the customer.

Advertising works the same way. For it is simply the application of assembly-line methods to the *manufacture of a sale.*

How can selling be mechanized? Just consider the five basic steps —

1. **Seeking out prospects**
2. **Arousing their interest**
3. **Creating a preference for your product**
4. **Making a specific proposal**
5. **Closing the order**

Advertising performs the first three of these jobs. And it performs them *far more economically* than any other means, leaving your salesmen free to concentrate their valuable time on the two jobs they alone can do, and do best.

As with any other capital investment, the yield from advertising depends on how *efficiently* it is put to work. But this much you can be sure of: nowhere does advertising work more efficiently than in business papers, with their tremendous concentration of hand-picked readers. Nowhere will your advertising dollar go so far toward reducing the cost of *manufacturing a sale!*

TEXTILE INDUSTRIES

is a member of The Associated Business Papers, who have published an interesting folder entitled, "10 ways to measure advertising effectiveness." We'll be glad to send you a copy. And if you'd like reprints of this advertisement (or the entire series) to pass along to others in your organization, just say the word.

You are Not Saving Money

By Continuing The Use Of All Wood Shuttles

The New *Duro-Weld Shuttles*

cost Less (over a period of time)

The material used in the *walls* of this Shuttle is a product of the laboratory,— not one grown by nature. Therefore it is absolutely free of defective growth usually found in the products of nature.

Hardwood Compressed or Stapak Walls

Phenolic Impregnated Cloth Walls

Having created the material, the next question was to make it an integral part of the Dogwood base to which it becomes a part. A technique of bonding these various materials has been so perfectly developed that they cannot be separated or torn loose.

The two materials become one through an unusual molecular action of adhesion.

Shuttles made of Duro-Weld have untold advantages, giving maximum strength and smooth wearing surfaces. It's the Modern Method of obtaining every characteristic wanted in a Shuttle.

Only *Southern* can supply it.

Send for complete data on Duro-Weld.

Go Modern — Go Southern.

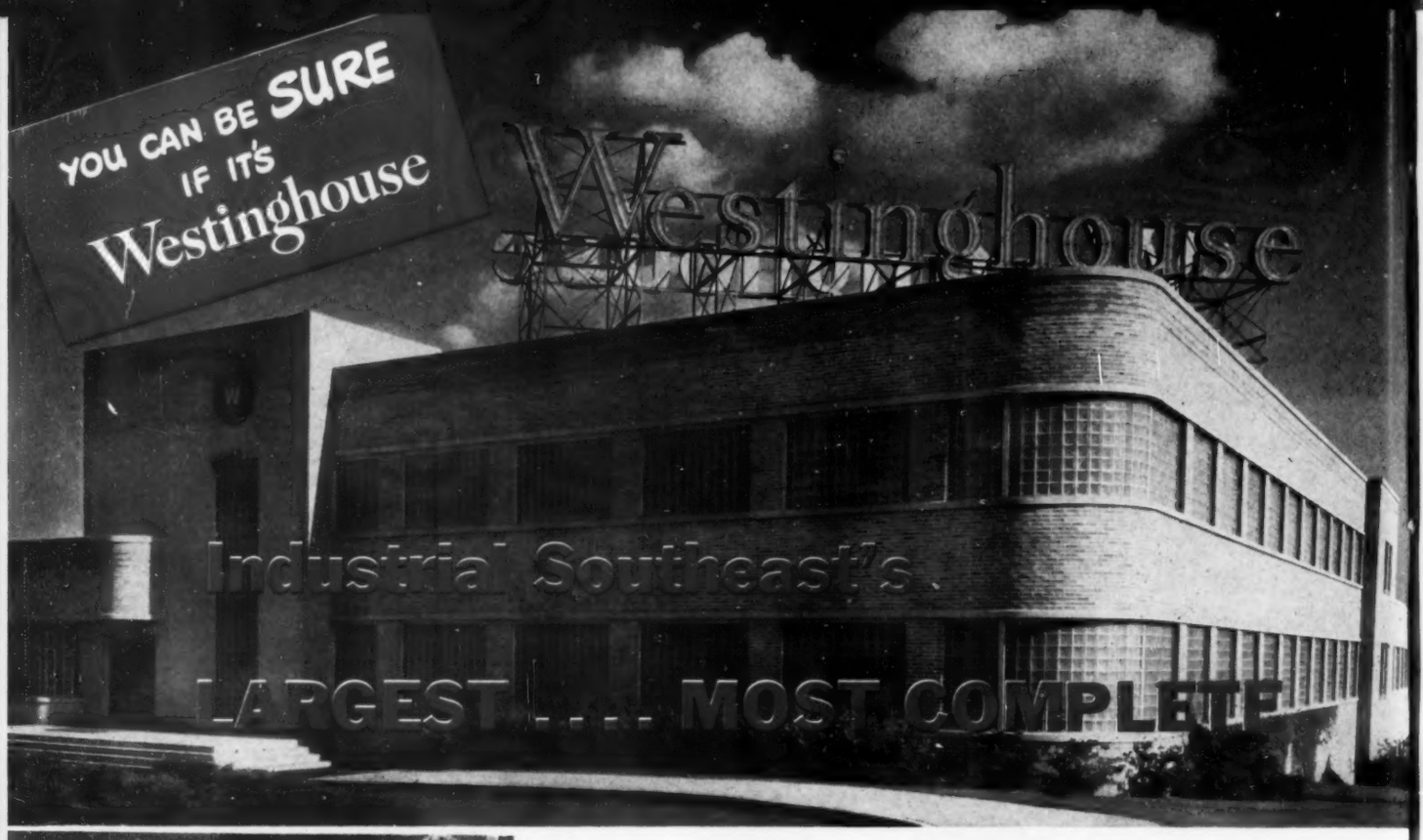
Our new, modern Shuttle Plant at Paris, S. C. is now open to better serve your needs.

Southern Shuttles Division

(Where Science and Continual Experimentation Are Concentrated on Shuttles)

of **Steel Heddle Mfg. Co.**

621 E. McBee Ave. Greenville, S. C.



THE ATLANTA PLANT pictured above, includes 58,000 square feet of shop space, devoted exclusively to the manufacture and repair of electrical apparatus. The electrical apparatus shown is typical of the hundreds of textile mill jobs handled annually.

ELECTRICAL REPAIR SHOPS

are located in Atlanta, Baton Rouge and Charlotte. These three Westinghouse Repair Shops specialize in repairing "all makes" of generators, motors and transformers.

Westinghouse is proud of its growth as a partner in the Textile Industry and today has three of the largest and most complete electrical repair shops in the Southeast.

All electrical apparatus repaired by Westinghouse is guaranteed. Factory trained engineers test and thoroughly check all repair jobs before they leave a Westinghouse shop.

"You Can Be SURE" your repair jobs will be given prompt attention when you send them to a Westinghouse repair shop.

TRY THIS REPAIR SERVICE TODAY

MAIL THIS COUPON TO

WESTINGHOUSE ELECTRIC CORP.
1299 Northside Drive, N. W.
ATLANTA, GEORGIA, BOX 4808-A

- ☐ Place my name on the mailing list to receive Westinghouse MAINTENANCE NEWS Magazine.
- ☐ Send me a folder describing more in detail the facilities available in your local repair shops.
- ☐ Please send a Maintenance Engineer to see me.

Name _____ Position _____

Company _____

Address _____

_____ SE101A

Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

ATLANTA, GEORGIA
1299 Northside Drive
Call Atwood 1642

BATON ROUGE, LA.
555 Choctaw Street
Call 3-6631

CHARLOTTE, N. C.
210 E. 6th Street
Call 5-3731

A REPAIR SERVICE UNPARALLELED IN THE TEXTILE INDUSTRY

ABBOTT Automatic WINDERS

Cut Winding Costs to the Bone!

How? Because one seated operator can run as many as 200 spindles with an hourly production of 800 to 900 bobbins tied in, throughout every week, at winding speeds up to 800 yards per minute! The operator's only task is putting full bobbins in a rotating magazine and doffing full packages.

In the face of ever-increasing production costs, wise management will investigate the labor-saving, cost-cutting Abbott Automatic Winder. Write for bulletin.

ABBOTT MACHINE COMPANY
FACTORY AND MAIN OFFICE
WILTON, NEW HAMPSHIRE
SOUTHERN OFFICE GREENVILLE, SOUTH CAROLINA

STOP COLOR BLEEDING

with *CULOFIX

Preserve crisp detail and contrast of prints by using time-tested Culofix as an after treatment.

Kill bleeding troubles no matter where they occur—in the finishing bath—batching up after dyeing—in cross dyeing, etc.

Improve water fastness of direct colors and impart a very desirable soft, full finish at the same time, thus eliminating an extra finishing operation. (Where no softening action is needed, Culofix L should be used.)

If fastness to water or prevention of color migration is essential to your direct color dyeings, write for Technical Service Bulletin #204-106.1.
Our technical staff is at your service without obligation.

*REG. U.S. PAT. OFF.

Arkansas Co. INC.

Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

It's new...

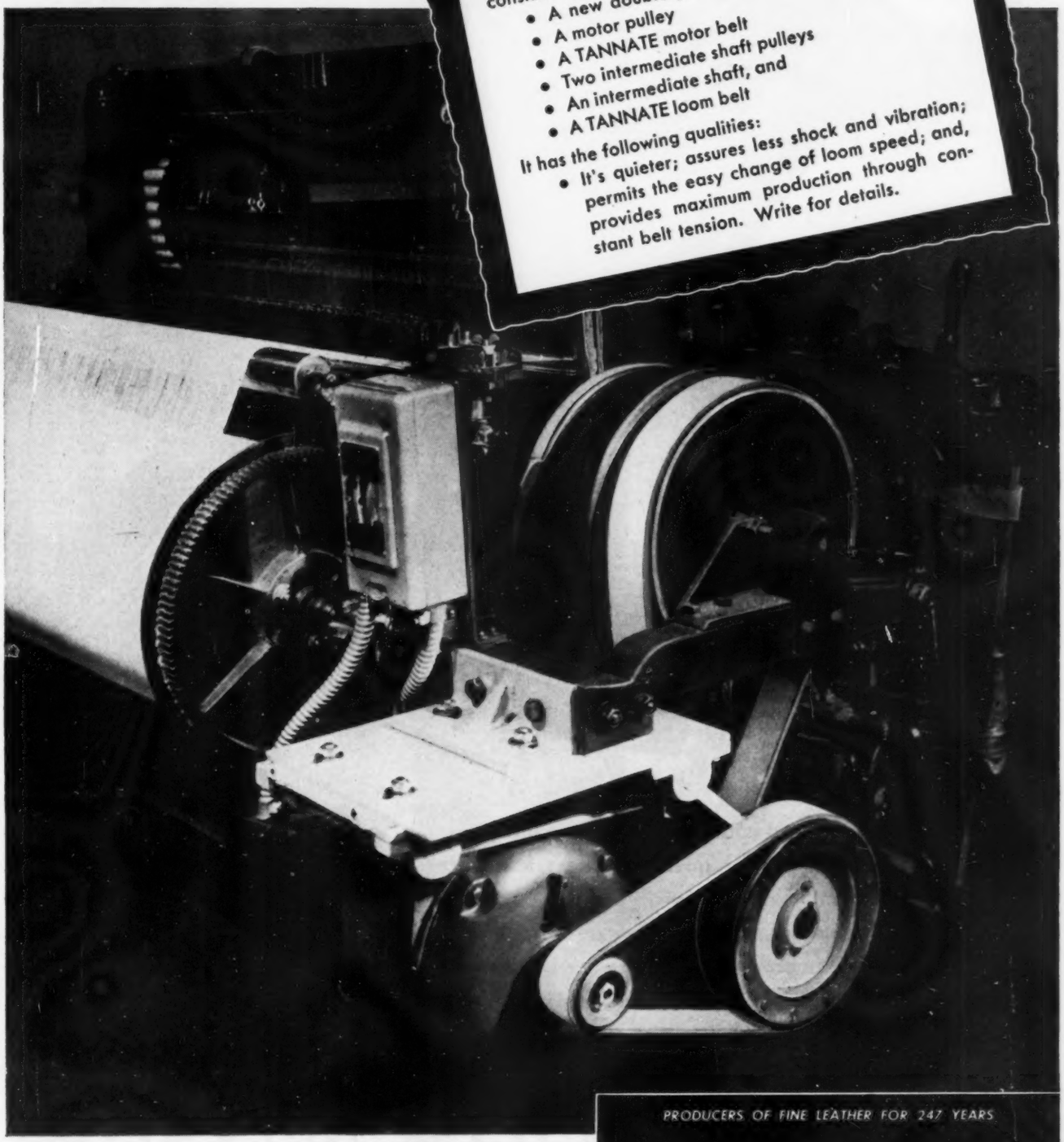
RHOADS TANNATE-ROCKWOOD LOOM DRIVE

The new Rhoads TANNATE-ROCKWOOD Loom Drive consists of:

- A new double pivoted motor base
- A motor pulley
- A TANNATE motor belt
- Two intermediate shaft pulleys
- An intermediate shaft, and
- A TANNATE loom belt

It has the following qualities:

- It's quieter; assures less shock and vibration; permits the easy change of loom speed; and, provides maximum production through constant belt tension. Write for details.



STRAPS FOR LOOMS AND OTHER MECHANICAL LEATHER PRODUCTS

PRODUCERS OF FINE LEATHER FOR 247 YEARS

J. E. RHOADS & SONS

35 NORTH SIXTH ST. PHILA. 6, PA.

NEW YORK • CHICAGO • ATLANTA

Hunt SPREADERS

• ADD YEARS TO LOOM LIFE •

New and Improved

- **Loomside Bearings Eliminated**

To eliminate the problem of keeping bearings in alignment, Hunt has now mounted *all four bearings* on the Spreader beam. Bored-in-line, they can never get out of alignment.

- **Heavier Weight**

The New Spreader is sturdier than previous models, providing even greater rigidity in the Spreader-and-Loom union. Permits ample room for beams, heddle frames, or spring type crank arms.

- **Requires No Adjustment**

The New Improved Hunt Spreader requires no adjustment at the time of installation, nor will adjustment be necessary if in future it is desirable to replace bearing bushings.

4 Machined-In-Line Bearings

Your looms, when equipped with Improved Hunt Spreaders, will produce more and higher quality cloth at less cost. Vibration is considerably reduced, picks-per-minute can be increased, breakdowns are noticeably fewer, maintenance costs are lower. The Improved Hunt Spreader is manufactured in sizes to fit looms of all makes, including the latest types and models. Write for full details.

HUNT MACHINE WORKS, Inc.

200 ACADEMY STREET TELEPHONE 2-5681

GREENVILLE, SOUTH CAROLINA

SANDOZ PRESENTS
the color achievement of the month

Golden Dust

...BY VERNEY

The idea came from the stagecoach days—the recollection of the coachman's greatcoat, perched up out of the dust. The fabric is Verney's faille Caprice... the yarn, acetate and viscose rayon.

Garments like this have a look of quality that must be protected by everlasting color beauty — which is why Verney Fabrics Corporation is one of the many textile leaders using Sandoz dyestuffs.

To protect the original beauty of solid shades against sunlight, crocking, dry cleaning and hot-pressing, Sandoz recommends, for acetate—

ARTISIL DIRECT YELLOW G
ARTISIL DIRECT SCARLET GP CONC.
ARTISIL DIRECT BLUE BSQ CONC.

and for viscose:

PYRAZOL FAST BROWN BRL
PYRAZOL FAST YELLOW RSW
PYRAZOL FAST BLUE 4GUL

And for any chrome, acid or direct dyes ... or auxiliary chemicals ... for both natural and synthetic fibres ... be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

SANDOZ *thinks ahead with textiles*

THIS IS NO. 75 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

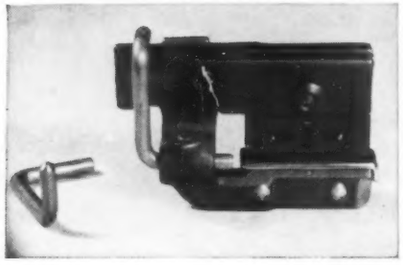


Fig. 1. New Auto-Nip Slub Catcher for Roto-Coner, used for single slubbing of worsted and spun rayon yarns (American System). At left is clamp used for adjusting.*

AUTO-NIP SLUB CATCHER

For higher efficiency in machine inspection of worsted and spun rayon yarns produced by the American system of spinning, Universal engineers have designed a new type of slub catcher, called the "Auto-Nip."

This slub catcher (Fig. 1) is intended primarily as a *single* slubbing device to catch soft slubs, particularly those of the "torpedo" type. It is to be used in place of either the MacColl or the fixed-blade slub catcher and *for this specific type of work alone.* It is not meant to replace the MacColl or fixed-blade slub catcher for all purposes.

However some mills which make a practice of double slubbing may wish to use the Auto-Nip in conjunction with the blade-type on their present double slubbing tension brackets. Whenever it is used in this manner, it *must always precede* the blade-type slub catcher; otherwise it will not inspect the yarn properly.

The Auto-Nip is attached to the Roto-Coner* tension bracket in the same manner as the other types, as shown in Fig. 2. The spring shown (A) in the rear view (Fig. 3) which applies pressure to the hinged bracket is heavier than the one used for the MacColl type. The tension leaf (B) has very finely tooled serrations to catch the slubs; it pivots on the pin (C), and its lower or serrated edge is held against the lower edge of the holder (D) by the light coil spring (E).

When the end of yarn, passing between the anvil and the serrated edge of the leaf, contains a torpedo-type slub, the serrations on the leaf will catch this slub and the leaf will be forced downward against the anvil breaking the end. Skinbacks are minimized due to the fact that the Auto-Nip permits a much larger opening than is possible when trying to catch these slubs with a fixed-blade type of slubber.

The serrated leaf on the Auto-Nip Slub Catcher is shorter in length than the row of needles on the MacColl type. It has been found that this shorter-length leaf facilitates cleaning and permits more effective slubbing. However, because of the shorter length of the leaf, if the Auto-Nip Slub Catcher were to follow the blade-type in a double slubbing combination, the yarn would be traversed beyond the scope of the serrated leaf and, consequently, would not be completely inspected. Hence, the recommendation that the Auto-Nip Slub Catcher *must always precede* the blade type.

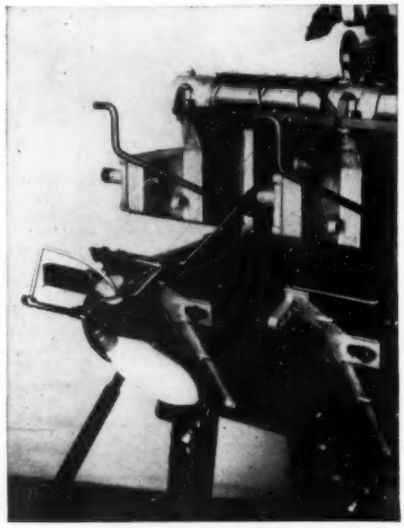


Fig. 2. Auto-Nip Slub Catcher applied to standard single-slubbing Roto-Coner Tension Bracket.*

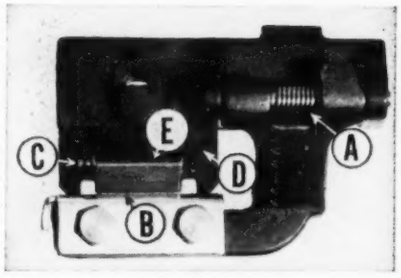


Fig. 3. Rear view, showing (A) spring for bracket, (B) tension leaf, (C) pivot pin, (D) holder, (E) coil spring for leaf.

The Auto-Nip Slub Catcher is set in the same manner as the MacColl type. A different clamp, however, is used to hold the hinged bracket in place while the adjustment is being made. The bail rod preceding the anvil is not used on this slub catcher; consequently, a new clamp was designed. This clamp is a bent steel rod; one end fits in the hole in the bracket in which the thread bail rod is held, the other end fits over the hinged bracket to hold it firmly in position while being adjusted.

See pages on Universal and Atwood Machinery in TEXTILE CATALOGS AND DAVISON'S

*Reg. U.S. Pat. Off.

May 1949

23-8-6

FEESONA

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL ATWOOD WINDING COMPANY

INCLUDING ATWOOD DIVISION

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

Hartofol C gives Extra wetting out action

Hartofol C Shows Nearly Twice the Wetting-Out Action Displayed by the Conventional Alkylated Aromatic Sulfonates

This *concentrated* alkylated aromatic sulfonate, available as a liquid gel, is stable to acids, alkalies and hard water. Hartofol C contains very little salt—you pay for the active organic ingredients only!

In addition to its excellent wetting action, Hartofol C shows good detergency (particularly in the presence of alkalies and phosphates) and good sudsing action. It is recommended for use in all textile processing where superior wetting-out, rewetting and scouring action are required.

THE HART PRODUCTS CORPORATION, 1440 Broadway, New York 18, N.Y.

HARTEX PRODUCTS

Rayon Oils & Sizes
Nylon Oils & Sizes
Kier Bleaching Oils
Finishing Oils • Delustrants
Synthetic Detergents
Conditioning Agents
Scrooping Agents
Splashproof Compounds
Leveling Agents
Cationic Softeners
Cotton Warp Dressings
Wetting-Out Agents
Weighting Agents
Mercerizing Penetrants

Hart Products

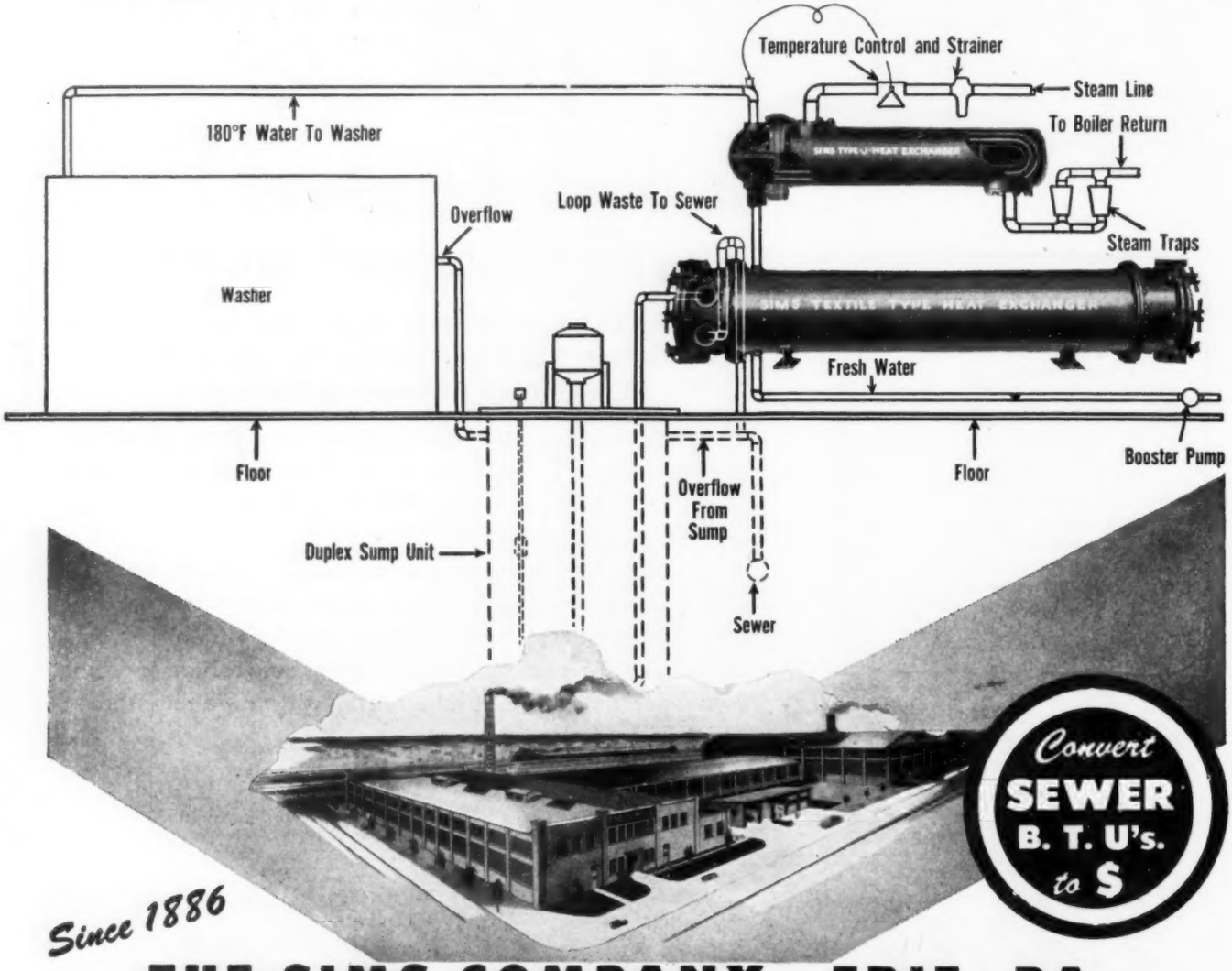
based on research

MILLS Show 70 to 90% Annual Return on Cost of SIMS Heat Recovery Systems . . .

Sims of Erie, Pa., heat recovery specialists, for 62 years have discovered a method of reclaiming valuable BTU's from linty contaminated textile open sewers. If your sewer water is over 120° F., you are wasting fuel enough to pay for this Sims System in a matter of months. Several textile plants show a 70 to 90% annual return on the first cost of their Sims Heat Recovery Systems.

One installation as shown below shows how 180° water is supplied to washers with a very minimum of steam required. Our nearest representative will be glad to survey the possibility of profitable heat recovery in your plant and make definite recommendations at no obligation to you. Consult with SIMS OF ERIE engineers today.

THE SIMS CO., BOX 1096T, ERIE, PENNA.



THE SIMS COMPANY • ERIE, PA.

Manufacturers of Exhaust Gas Boilers • Heat Exchangers • Storage Water Heaters • Feed Water Heaters Steam Separators • Commercial Type Instantaneous Water Heaters • Oil Heaters • Quenching Oil Coolers Caustic Soda (Sodium Hydroxide NaOH) Recovery Equipment and Unit Type Coal Pulverizers

How NOPCO* FUA

cuts your wool processing costs

3% **OF NOPCO FUA**

applied to stock is all you need—3 lbs. NOPCO FUA per 100 lbs. wool—as against

8% **OF CONVENTIONAL WOOL OILS**

This tremendous differential is only one of the reasons why this initially *higher priced* product is proving the *most* economical of all wool oils in actual performance. Other reasons are

100% **ELIMINATION OF SOAP**

NOPCO FUA *eliminates the need for all soaps and detergents* in fulling and scouring. It also stops static completely during carding. It does not rust or corrode. NOPCO FUA is anhydrous, all fatty, contains no mineral oil or hydrocarbons—is salt free and ash free.

What these percentages mean to YOU

They mean . . . increased production quality and volume, valuable savings of time and equipment, reduced cost of *all* operations. Try NOPCO FUA in your mill. Give your wastions the benefit of its many exclusive advantages, its unparalleled versatility.

NOPCO

SEND FOR NOPCO FUA TECHNICAL BULLETIN

Mail coupon today and get *all* the facts about NOPCO FUA's versatile aid to better wool processing.

NOPCO CHEMICAL COMPANY. Harrison, New Jersey

Formerly National Oil Products Company

BRANCHES: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF

*Reg. U. S. Pat. Off.

MAIL TODAY

NOPCO CHEMICAL COMPANY
Harrison, New Jersey (Dept. 23)

Please send, without obligation, your NOPCO FUA Technical Bulletin.

FIRM NAME_____

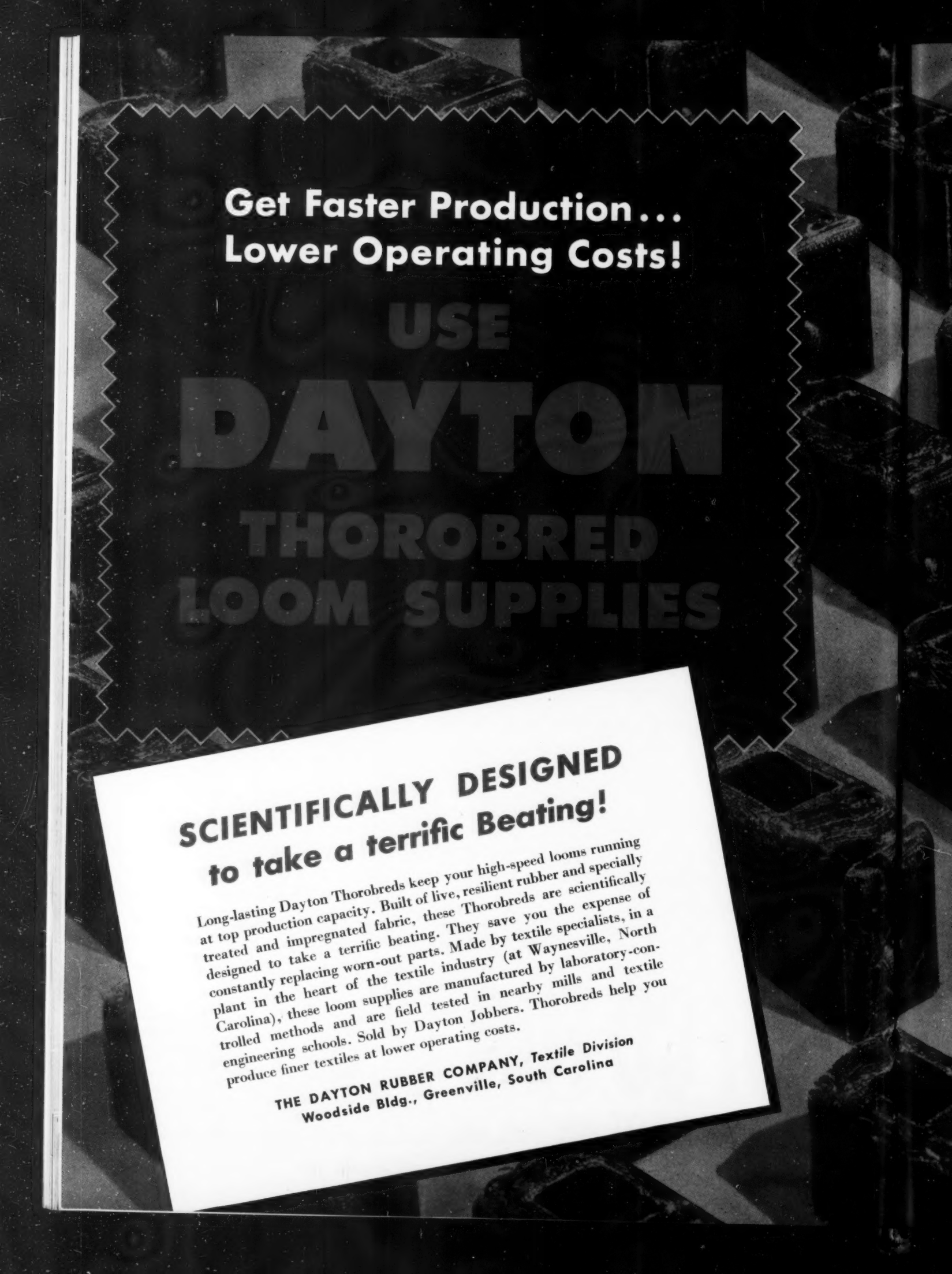
STREET ADDRESS_____

CITY AND ZONE_____ STATE_____

SENDER'S NAME_____

NOPCO FUA

SELF-FULLING SELF-SCOURING WOOL OIL


Get Faster Production...
Lower Operating Costs!
USE
DAYTON
THOROBRED
LOOM SUPPLIES
SCIENTIFICALLY DESIGNED
to take a terrific Beating!
Long-lasting Dayton Thorobreds keep your high-speed looms running at top production capacity. Built of live, resilient rubber and specially treated and impregnated fabric, these Thorobreds are scientifically designed to take a terrific beating. They save you the expense of constantly replacing worn-out parts. Made by textile specialists, in a plant in the heart of the textile industry (at Waynesville, North Carolina), these loom supplies are manufactured by laboratory-controlled methods and are field tested in nearby mills and textile engineering schools. Sold by Dayton Jobbers. Thorobreds help you produce finer textiles at lower operating costs.
THE DAYTON RUBBER COMPANY, Textile Division
Woodside Bldg., Greenville, South Carolina

REVERSIBLE

Drop Box Pickers

This Reversible Drop Box Picker lasts longer and gives better shuttle contact. Made in a one-piece unit, it has three degrees of hardness. Very hard at spindle hole—won't wear egg-shaped—requires no lubrication. Soft around picker stick hole to absorb terrific impacts. Very soft at shuttle contact to assure perfect throws and eliminate shuttle point loosening. Non-reversible type has same construction.

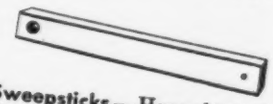
THOROBRED Loop Pickers

Built of extra tough fabric and resilient rubber molded together in a super strong unit. Stays put on stick. Easy to apply. Absolutely uniform. Assures a perfect shuttle throw. Eliminates shuttle bounce. Has twice the life of ordinary loop pickers.

THOROBRED Lug Straps

Built-in cushion protects cam points and picker stick. One-piece construction. No rivets. Never needs adjusting. Has proper "give" and ability to "come back" immediately. Easy to apply. Not affected by humidity. Gives trouble-free service and outlasts three ordinary lug straps.

MORE THOROBRED WEAVE ROOM SUPPLIES



Sweepsticks—Have just the right resiliency. Not affected by temperature, moisture or oil. Will not "grow".

Hold-up Straps—Built of numerous plies of strong, squarely-woven fabric, bonded together with slightly flexible, yet long-wearing, rubber composition.

Take-up Roll Coverings—Have a high coefficient of friction and excellent holding quality. They are oil-resistant and long wearing.

Frog and Loom Bumpers—Made of specialized rubber to give months of trouble-free service. Sizes to fit all looms.

Reversible Picker Bumpers—Have maximum shock resistance and minimum distortion during their long life.

Temple Rolls—Made from Dayco tubing. Are impervious to oils and chemicals. Resistant to abrasion, and can be used with all types of fabric.

DAYTON ALSO MAKES:

Doll or Tail Pickers
Bobbin Stripper Blades
Jute Loom Pickers
Spindle Rod Bumpers
Bunters and Bumpers

Dayton Rubber

FEEL their sense of pride? Tuffer card clothing is a joy to put on. Its specially constructed cylinder cloth hugs the cylinder and holds the points in perfect alignment.

Soon these cylinders will begin to roll . . . opening up, separating, and paralleling the individual fibres . . . improving the operation of subsequent manufacturing steps.

Call in a Tuffer man—let him help you get the right start toward better quality and higher operating efficiency.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

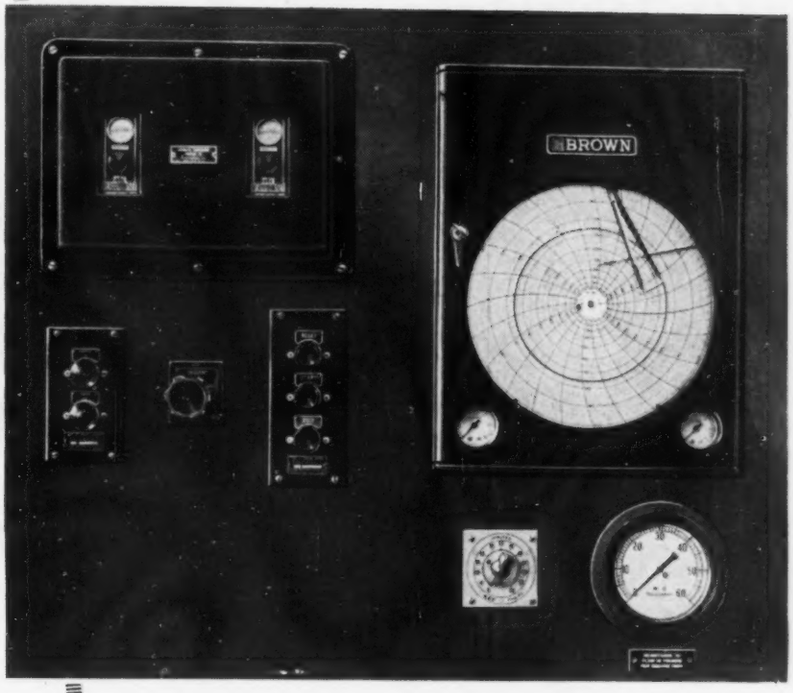
Branches: Philadelphia, Pa. and Blanca, Texas *Direct Representation in Canada* A-6

TUFFER CARD CLOTHING ***IMPROVES PRODUCTION ALL ALONG THE LINE***

Raise the

QRE*

RATING of your Package Dyeing



*QRE = Quality, Reproducibility, Efficiency.

...with the Brown Control System

For Package Dyeing, it's easier to get *quality*, *reproducibility*, and *efficiency* by accurate control of temperature, treatment time, and flow reversal.

The Brown Package Dyeing Control System meets requirements in a compact and versatile combination of instrumentation. It provides for convenient setting of the temperature controller and the timers, for starting the flow of dye liquor in either direction, and for easy shifting between automatic and manual operation. Signal lights indicate the direction of liquor flow at all times.

You get complete control for your package dyeing in a complete package unit . . . centralized, convenient, easy to operate and maintain!

Call in your local Brown engineer for free consultation and advice . . . or write for a copy of Data Sheet #8.1-12.

MINNEAPOLIS-HONEYWELL REGULATOR CO.
BROWN INSTRUMENTS DIVISION
4492 Wayne Ave., Philadelphia 44, Pa.
Offices in principal cities of the United States, Canada and throughout the world

MINNEAPOLIS Honeywell — *Advanced Instrumentation* FOR THE TEXTILE INDUSTRY — BROWN INSTRUMENTS

to weave
a fine cloth

MORE THAN HALF A CENTURY of teamwork and cooperation is woven, with the yarn, into the fabric of every yard of Cone cloth. Men and women, weavers, spinners, mechanics . . . each and every one of more than 13,000 employees . . . devoted to their jobs and proud of their communities, reflect this spirit by the high pride of skill and workmanship in cloth that bears the Cone *"Seal of Service"*.

This seal, product of men and women of the Cone organization, many of whom have long years of loyal and faithful service, is recognized and accepted as a symbol of quality.

DENIMS • FLANNELS • RAYON FABRICS • CORDUROYS • DRILLS • JEANS
BROADCLOTH • FANCY FLANNELS • COVERTS AND SUITINGS • TWILLS
TURKISH TOWELS AND WASHCLOTHS • PRINT CLOTHS • DYED AND PRINTED FABRICS

*®CONE MILLS CORPORATION
GREENSBORO, N. C.

PROXIMITY PLANT, Greensboro • WHITE OAK PLANT, Greensboro • REVOLUTION DIVISION, Greensboro • REVOLUTION RAYON PLANT, Greensboro
TABARDREY PLANT, Haw River, N. C. • EDNA PLANT, Reidsville, N. C. • RANDLEMAN PLANT, Randleman, N. C. • PINEVILLE PLANT, Pineville, N. C.

ASSOCIATE COMPANIES

CONE FINISHING COMPANY: PRINT WORKS PLANT, Greensboro, N. C.; GRANITE PLANT, Haw River, N. C. • **ENO COTTON MILLS,** Hillsboro, N. C.
MINNEOLA MANUFACTURING COMPANY, Gibsonville, N. C. • **CLIFFSIDE MILLS:** CLIFFSIDE PLANT, Cliffside, N. C.; HAYNES PLANT, Avondale, N. C.
FLORENCE MILLS: FLORENCE MILL, Forest City, N. C.; AMERICAN SPINNING DIVISION, Greenville, S. C. • **ASHEVILLE FABRICS MILL,** Asheville, N. C.
SALISBURY COTTON MILLS, Salisbury, N. C.

Selling Organization: CONE EXPORT & COMMISSION CO., INC., 59 WORTH ST., NEW YORK CITY

FOR COTTONS, RAYONS, MIXED GOODS

RAPIDASE saves you money because

1—It de-sizes efficiently at high speeds.

This fast-acting enzyme is particularly adaptable for high-speed continuous de-sizing. ranges, shorter time in the box or fewer ends on the jig.

2—It is effective in low concentrations.

This concentrated product can be used advantageously in concentrations as low as one tenth of 1%.

3—High temperatures can be used to increase its activity.

The starch-solubilizing action of Rapidase is doubled with each 18° rise in temperature between 120° and 200° F, permitting advantage to be taken of the increased penetration and easier removal of the decomposition products at the higher temperatures.

RAPIDASE
for de-sizing®

TECHNICIANS AVAILABLE • WRITE FOR BOOKLET

WALLERSTEIN COMPANY, INC. 180 MADISON AVENUE, NEW YORK 16, N. Y.

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

DOUBLE PURPOSE rainwear and outerwear in general can now be given DOUBLE PROTECTION — water repellency plus water borne stain resistance — with Cyanamid's PARAMUL* 115 semi-durable water repellent. Investigate its ease of application and other desirable features.

THAT SOFT TEXTURE so essential to fabric sales appeal demands fine finishing oils. Rely on Cyanamid SULFONATED OILS to achieve a smooth, soft hand. Our large scale production methods assure *uniform* high quality.

DECERESOL* OT LEVELS DYEING—AND DYEING COSTS

One of the many advantages of DECERESOL OT Wetting Agents in textile processing is its remarkable efficiency in achieving uniformly level shades in dyeing—at real savings in time and cost.

DECERESOL OT is the fastest wetting, penetrating and dispersing agent available. It has applications in all branches of the textile industry and for all fibres and fabrics, including cotton, wool, silk, linen, rayon and the newer synthetic fibres. It is supplied in liquid form, ready for instant addition to the wet processing bath, without preliminary make-up. As with all Cyanamid textile specialities — penetrants, softeners, finishes, sizing compounds, PARAMUL* Water Repellents and others —our laboratory facilities are available to assist you in its application.

Write for our booklet, "DECERESOL Wetting Agents for Textiles," which lists many ways in which these products can effect savings.

*Reg. U.S. Pat. Off.

AMERICAN Cyanamid COMPANY
INDUSTRIAL CHEMICALS DIVISION, DEPT. N5
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

For Blending, Opening, Tinting and Lapping Synthetic Fibres

The ALDRICH - LUMMUS

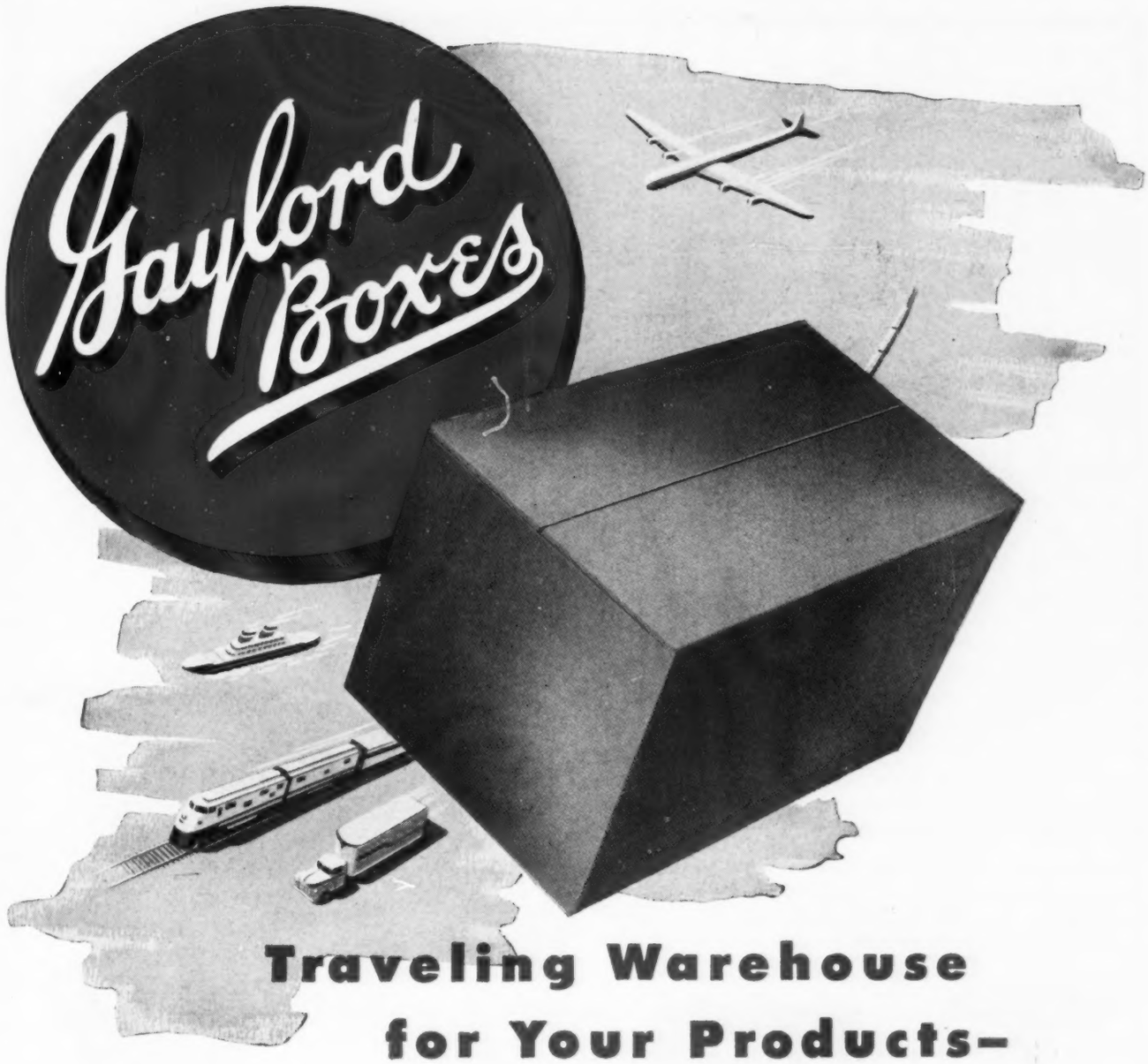
Synthetic Fibre Blending System

Provides a simple, compact, flexible and efficient method for producing finished laps from raw stock in one continuous range of automatic machinery.

The weighed mix is fed into a supply feeder, and is blended, opened, tinted and delivered to a single-process picker, from which finished laps are taken without any intermediate hand work. The whole process is automatic.

AldricH MachinE

Greenwood WorkS South Carolina



Traveling Warehouse for Your Products—

Through all the bumps, jars, jolts, strains, lifting, dropping, storing and handling that your product must encounter in its journey from factory to user, Gaylord Protective Packaging assures a safer trip.

Gaylord greater protection is the result of complete quality control plus scientifically engineered designing.

There's a Gaylord service office near you. Call them for prompt, helpful cooperation.

- Corrugated and Solid Fibre Boxes
- Folding Cartons
- Kraft Grocery Bags and Sacks
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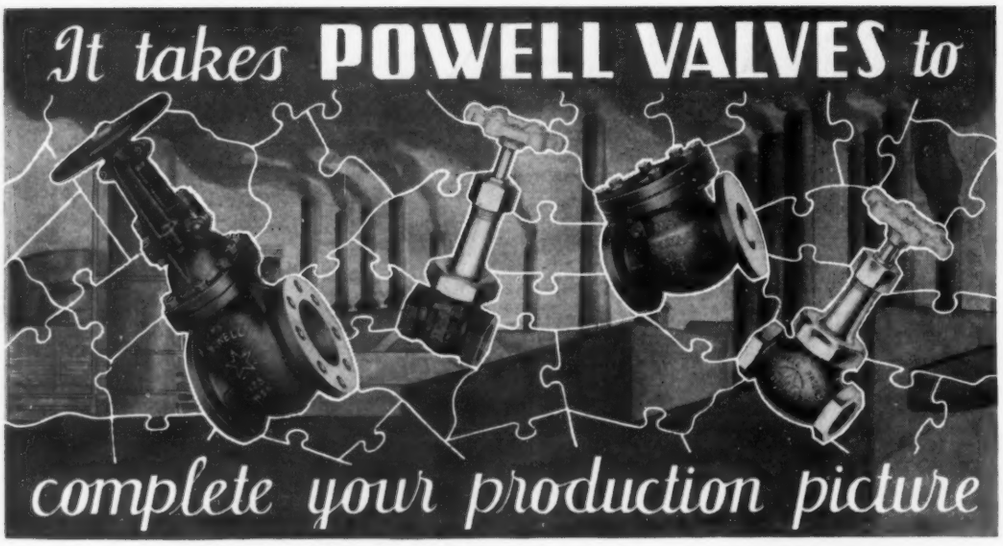
It takes POWELL VALVES *to*



complete your production picture

Everyone knows that in putting together a jig-saw puzzle picture it's simply a matter of putting the right piece in the right place.

In the case of flow control equipment the principle is the same. Because, only by installing the right valve—in design and material—to meet all the requirements of a specific service, can failures due to misapplication be eliminated.

Fortunately Powell *has been* applying this principle for more than a century. The result is a line of valves which is so complete that, for any set of flow control conditions encountered today, there's a Powell Valve that exactly fits all requirements.

So why not let Powell Engineers help you to complete your production picture by selecting valves that are specifically designed for your individual flow control services. Write us for details.

Fig. 500 — 125-pound Bronze Gate Valve with screwed ends, screwed-in bonnet, inside screw rising stem and tapered wedge, solid or double.

Fig. 241—Large 125-pound Iron Body Bronze Mounted Globe Valve. Made in sizes 2" to 16", inclusive. Has outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc. Also available in All Iron.

Fig. 1816—Large 125-pound All Iron Gate Valve. Made in sizes 2" to 30", incl. Has bolted flanged yoke, outside screw rising stem and tapered solid wedge. →

Fig. 150—150-pound Bronze Globe Valve with screwed ends, union bonnet and renewable composition disc.

Fig. 559—125-pound Iron Body Bronze Mounted Swing Check Valve with flanged ends, bolted flanged cap and regrindable, renewable bronze seat and disc.

The Wm. Powell Company

Cincinnati 22, Ohio

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POWELL VALVES

The Cocker High Speed Section Beam Warper

With Magazine Cone Creel
And Eyeboard Stop Motion

Heavy Construction: for a minimum of vibration and wear. Accurate Controls: most of which function automatically to produce highest quality warps. High Speed: for quantity production. Superb Engineering: This Section Beam Warper contains every feature of proven worth. All parts are engineered for long, trouble-free service and are easily accessible for quick repair or replacement, keeping downtime to a minimum.

For further information, quotations, etc., write or wire

Cocker Machine and Foundry Co., Gastonia, N. C.

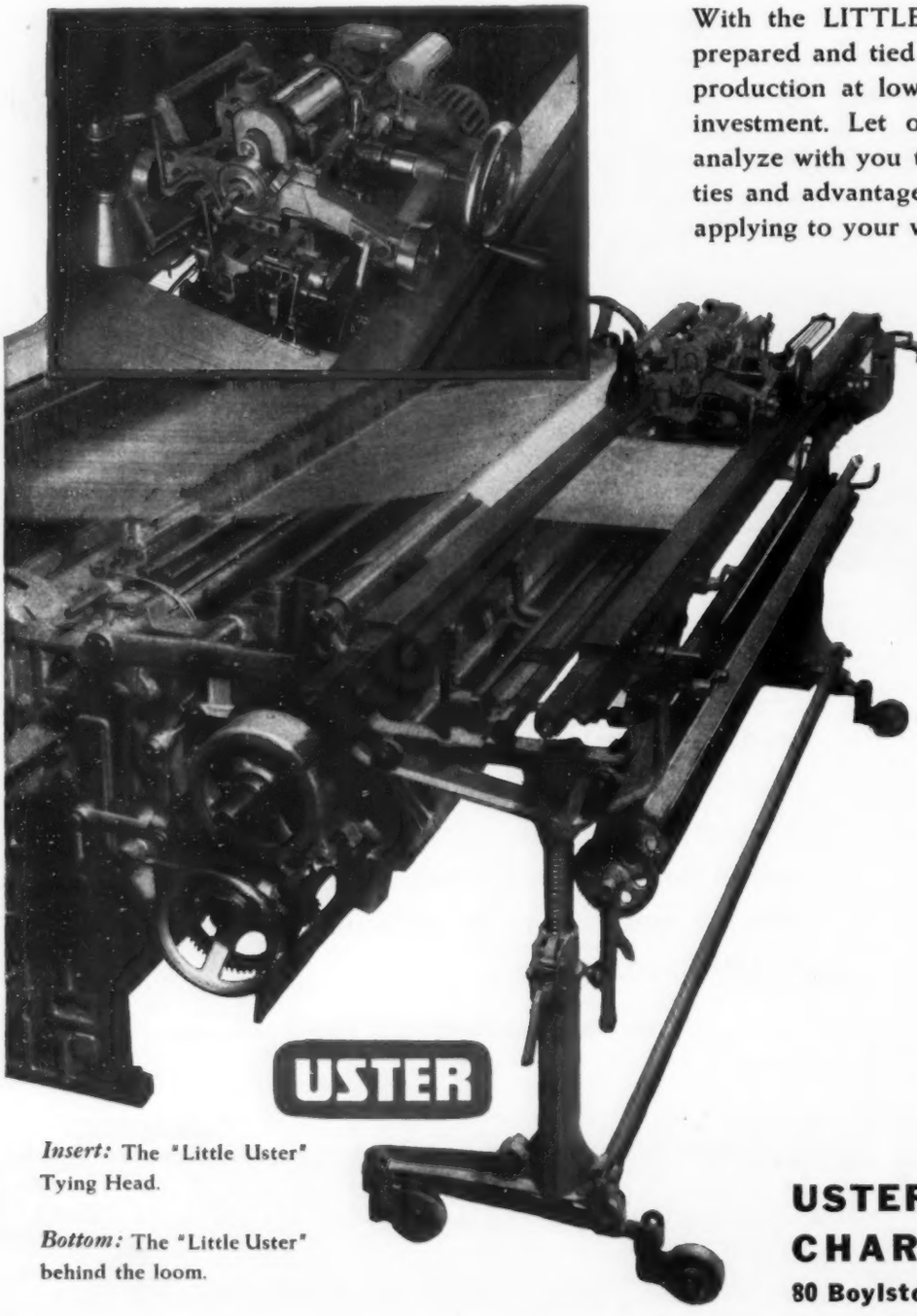
WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

120,000 Ends Tied in Eight Hours

A lot of ends when tying portable—but just a regular day's work for a LITTLE USTER operating in a southern mill. Yes, the conditions in this mill are favorable. Well prepared filament yarn warps of approximately 14,000 ends are being tied. The operator is well trained and skilled in using the machine.

An equivalent speed cannot be expected nor attained in every mill. Tying speed is dependent directly on material and operating conditions. However, whether tying the finest silks to the coarsest woolen yarns with the LITTLE USTER, the entire warp tying process is accelerated and simplified to the maximum degree.

With the LITTLE USTER, more warps are prepared and tied in less time, meaning more production at lower costs and with a lower investment. Let our experienced technicians analyze with you the money making possibilities and advantages of the LITTLE USTER as applying to your weaving mill.



Insert: The "Little Uster" Tying Head.

Bottom: The "Little Uster" behind the loom.

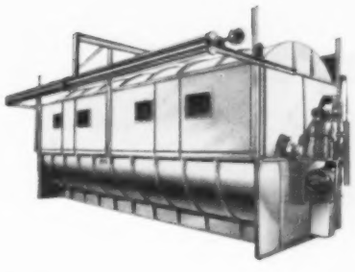
- Entire warp tied in one single "bite".
- Warp prepared for tying in one single continuous operation.
- New warp prepared on one loom while LITTLE USTER is tying on another.
- Adjustable in less than two minutes for tying any material.
- Ties a leased sheet to an unleased sheet, or ties with or without lease.
- Ties on loom (portable) or away from loom (stationary) with equal efficiency.

USTER CORPORATION
CHARLOTTE 6, N. C.
80 Boylston Street, Boston 16, Mass.

One of a series painted for Rodney Hunt by Ben Stephenson

FAMOUS FINISHES . . *The 6-metre boat "Goose" crosses the finish line less than one minute ahead of her competitor, the Swedish "Maybe VI," to win the 1948 Gold Cup series, held in September off Oyster Bay, Long Island. This marked the fourth time in ten years that the "Goose" captured the coveted Gold Cup.*

VERNEY is famous for its "finishes," too! The Verney Corporation's Finishing Division has long been outstanding for the fine finishes of its dress and menswear fabrics. Helping them keep ahead in quality and costs has been the exclusive use of modern Rodney Hunt "Tru-Shade" Dye Becks with their unique patented "Curve-of-Strength" construction. Wherever you find "famous finishes" in textiles, you're apt to find the famous finishing equipment of "Rodney Hunt." You are invited to turn the page for more specific information about "Finishing For Profit."



RODNEY HUNT

RODNEY HUNT

Established 1840

ORANGE 10, MASSACHUSETTS, U. S. A.

"Tensitrol," "Tru-Shade," "Slack Loop," "Wring-Master," and "Curve-of-Strength" are registered trade marks identifying textile finishing machinery manufactured exclusively by Rodney Hunt Machine Co.

Finishing For Profit

RODNEY HUNT

Established 1840

RODNEY HUNT MACHINE CO.
ORANGE 10, MASSACHUSETTS, U.S.A.

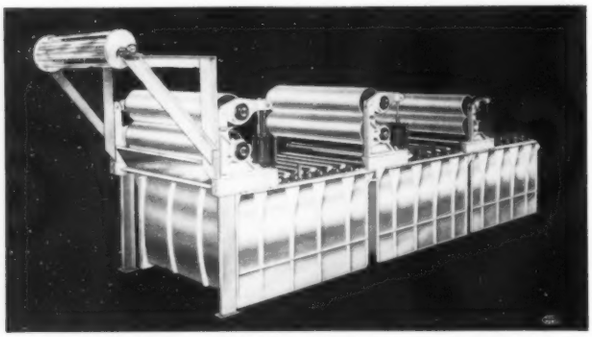
Trouble-Free "Tensitrol" Washers Synchronized with Dryers on Rayons

"TENSITROL" Open Width Washers operating on all types of rayon fabrics have proved so trouble-free that they have been *synchronized with the dryers* at one of the world's largest rayon manufacturing and finishing plants.

Other "Tensitrol" Washers at the plant are also operating on open width rayons at *speeds in excess of 100 yards a minute,* compared to the previous maximum speed of 60 yards a minute.

Completely tensionless operation—obtained with no change in speed of any moving part of the "Tensitrol" Washers — made that 66% production increase possible. Damage to the most delicate of rayons, from pulling and hauling under previous methods of washing, was ended in the "Tensitrol" Washer because the fabrics were free to shrink or stretch at any point in the machine.

Tangles are similarly unknown. Time lost under previous makeshift methods, aimed at continuous processing, has been eliminated.

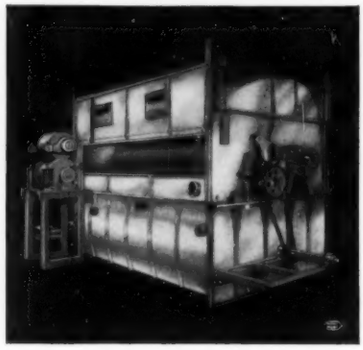


Substantial savings in horsepower requirements, floor space, and water consumption have all been noted by officials at the rayon plant. The proved efficiency of "Tensitrol" Open Width Washers is now available to finishing plants everywhere.

★ ★ ★

Most Versatile Machine in Wet Finishing Plants

"SLACK LOOP" machines, made exclusively by Rodney Hunt, will be found in finishing plants throughout the world, being used for: Bleach washing of sheetings at 150 yards a minute; washing lace curtains free of graphite; rope soaping cotton prints at 150 yards a minute; continuous tinting and sizing of curtains at high speed; continuous washing of lace dress fabrics; rope soaping rayon prints without mark-off; high speed processing of terry toweling without distortion; scouring and caustic boiling.

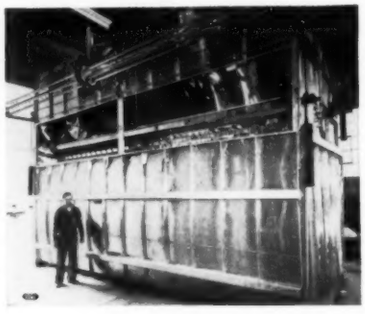


Not only are "Slack Loop" machines the most versatile, but are the highest speed of their type. At speeds up to 150 yards a minute, they operate with unmatched efficiency in any of the operations listed above and cause fewer stoppages caused by tangles or tight strands.

★ ★ ★

World's Largest Dyeing Machine

THE twenty-foot Rodney Hunt "Tru-Shade' Dyeing Machine pictured here is the world's largest and is now in operation on wool blends.



The patented "Curve-of-Strength" stainless steel tub easily withstands the pressure of nearly thirty tons of dye liquor without flexing. The tub itself is seven feet deep and the dyeing machine as a unit, with its fully enclosed top, stands sixteen feet in the air.

While the "Curve-of-Strength" makes it possible to build tubs of this size or of even greater dimensions, the patented "pipe body" construction of the twenty-foot reel permits great weights of fabric to be carried without sign of twisting or distortion.

"Tru-Shade" Dye Kettles and Dye Becks are readily available in a large range of sizes in stainless steel, with equipment to fit any need.

★ ★ ★

If further information is desired on the above subjects, please address your inquiries to the Rodney Hunt Machine Co., Orange 10, Massachusetts, U.S.A.

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AND NOW!

The Finest Oleic Acid

Available Commercially

EMERSOL 233 LL* ELAINE
Linoleic & Other Polyunsaturated acids.....less than 4%
Monounsaturated acids.....over 90%
Saturated acids.....less than 5%
*LL, low-linoleic content

The new unique Emersol 233 LL Elaine† is *unlike* any oleic acid (red oil) you have ever used. Commercial production shows less than 4% polyunsaturates (regular grades from 2.5 to 4 times as much). Check these other advantages:

- Highest color and heat stability of any commercial oleic acid.
- Greater resistance to oxidation and rancidity. Mackay tests show no significant increase in temperature after 7 hours. (This compares with other grades of Emersol Elaine which hold for 2 to 3 hours, and competitive red oils where time seldom exceeds 1 hour.)
- Bland odor . . . superior odor stability.
- Color almost water-white.
- End products exhibit unusual characteristics . . ; improved initial color and odor, greater heat and odor stability.

Recommended for manufacture of purer esters (oleates), pharmaceuticals, odorless shampoos, improved dry cleaning, liquid and specialty soaps, textile specialties. Write for full information and complete specifications.

†Elaine, T.M. Reg. U. S. Pat. Off. describes all grades of oleic acid manufactured by Emery Industries, Inc.

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3 Ways to Cut

1. PRODUCE MORE PER MACHINE HOUR

with Vari-Pitch Drives

QUICK EASY SPEED CHANGES and accurate speed control will give you more production, reduce your unit costs. The simplest method of speed control is Vari-Pitch Drive. Simple, rugged, clean, quiet — these drives give you the speed control you need at lower cost than any other way. Three types cover all applications.

STATIONARY CONTROL — Most widely used and lowest cost speed control. Change speeds in 5 to 8 minutes. Speed range of 50% to 100%.

MOTION CONTROL — Changes speed instantly *while machine is running*. Same 50% to 100% speed range. Greatest saving where speed changes are frequent.

SPEED CHANGERS — Fully enclosed multiple V-belt drive with special sheaves giving 375% speed range. Single handwheel adjusts *while running*.

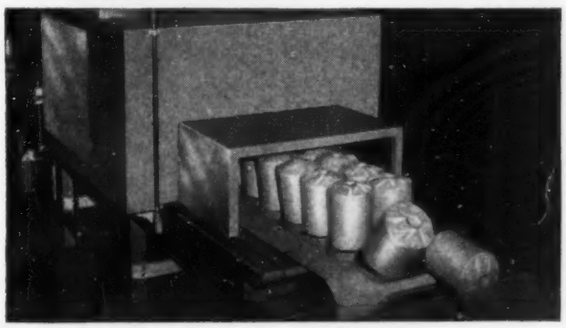
You can figure the saving in dollars and cents with the help of your Allis-Chalmers Authorized Dealer or District Office representative. He will help you analyze your operations and show you time and cost savings in your own production setup. Consult an Allis-Chalmers drive expert today. Also listed in Sweet's.

A 2644

Texrope, Vari-Pitch and *Quick Clean* are Allis-Chalmers trademarks.

Costs FOR TEXTILE MEN!

2. SPEED HEATING AND DRYING *with Allis-Chalmers Dielectric Heaters*



DIELECTRIC HEATING has resulted in outstanding production records in many textile mills. Its chief advantages are: Increased speed, which smooths out production sequences and reduces stock in process. . . . Close heat control, which improves product quality greatly. . . . Even heating throughout, which improves product uniformity. *Allis-Chalmers Dielectric Heaters produce results that cannot be duplicated by any other process.*

Typical Examples: Drying reduced from days to minutes. Shrinkage variation below 0.4%. Twist set in minutes with definite improvement in tensile strength.

Go over your production methods with an Allis-Chalmers dielectric heating expert. He can tell you if your operations can be improved by this new method. He will show you cost figures based on your operations. You can't afford to miss this opportunity. Contact your A-C District Office or write direct today.

3. REDUCE MAINTENANCE COST *with Allis-Chalmers Textile Motors*

QUICK-CLEAN MOTORS
Less down-time for cleaning because large fans produce a greater volume of air and keep lint moving through unrestricted air passages. There is no place for dirt to lodge. Bearings are sealed — they may be operated five years without attention. Grease does not leak out. Available from 2 HP at 1200 rpm to 15 HP at 1800 rpm. Some in stock, others on quick delivery.

LOOM MOTORS
Totally enclosed, non-ventilated type. They have all of the operating characteristics required for efficient loom drive: high maximum torque . . . smooth power under rapidly changing load . . . extra overload capacity for breaking-in operation.

In addition, these motors have construction features necessary for long life and minimum maintenance. Anti-friction bearings . . . die-cast rotor, accurately turned and balanced . . . "Formvar" copper wound stator, twice dipped in insulating varnish and oven-dried.

Immediate delivery on ¾ and 1 horsepower ratings.

ALLIS-CHALMERS, 1054A SO. 70 ST.
MILWAUKEE, WIS.

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

for 15 years { . . . JOHNSON JOINTS have been furnished on Morrison textile machines

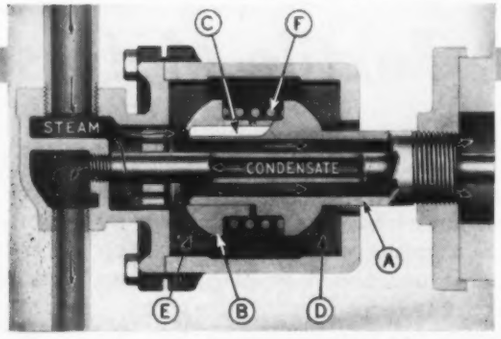
The set of dry cans pictured at right is one of the latest models of the Morrison Machine Co., of Paterson, N. J. In keeping with its up-to-the-minute chain drive design, it is equipped completely with Johnson Rotary Pressure Joints.

Morrison is noted for being among the first to reflect new advances in textile machinery. It is significant that they were so quick to recognize the merits of Johnson Joints. It was early in 1934 that Morrison first ordered Johnson Joints to be furnished as standard equipment.

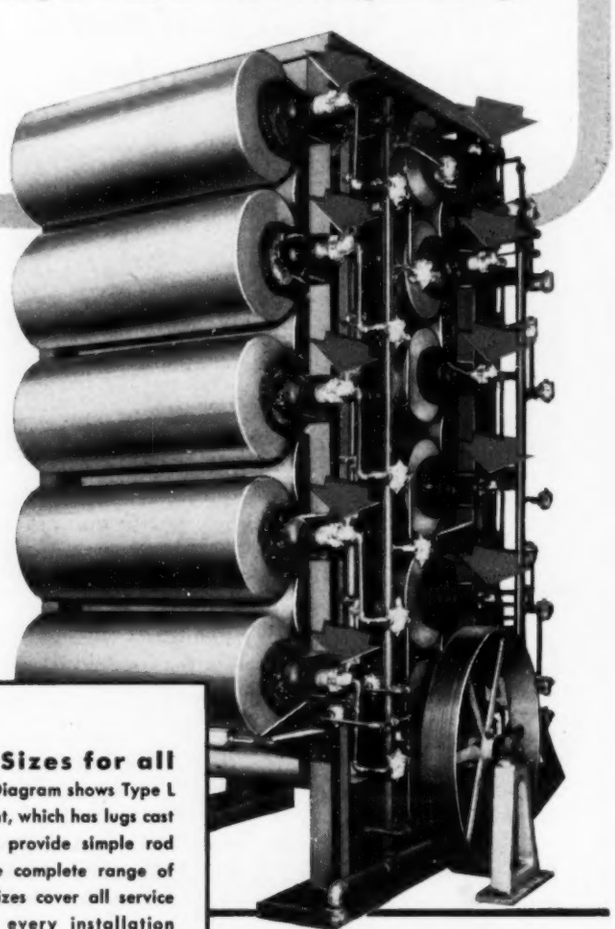
Manufacturers like Morrison Machine Co., and the many others who have followed suit, cannot afford to guess wrong on such components. Their wholehearted adoption, and increasing use, of Johnson Joints is a clear indication of the unmatched savings and benefits you can expect.

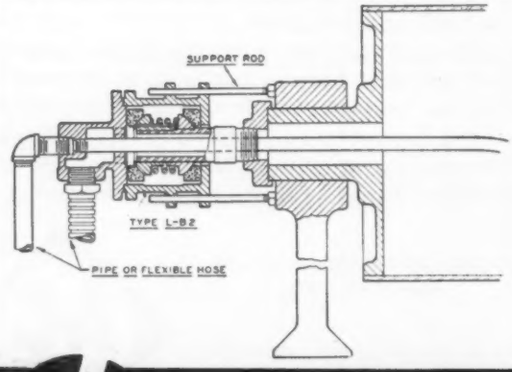
Briefly the facts are these. The cost of switching over comes back quickly from savings in maintenance alone; the Johnson Joint is completely packless, asks no oiling or adjusting, is even self-aligning. And all the while it materially boosts production by ending so many causes of machine shut-down and by facilitating more efficient methods of syphon drainage.

Write for literature today; get all the facts



JOHNSON ROTARY PRESSURE JOINT—Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, presses seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only.





Types, Sizes for all needs—Diagram shows Type L Johnson Joint, which has lugs cast on body to provide simple rod support. The complete range of types and sizes cover all service conditions, every installation requirement.

For large Slashers and Double Drum Dryers learn about the Johnson Speed-Heat System, which brings faster heating, hotter cylinders, job-proved increases in slasher speed of as much as 25%.

Product of The **Johnson Corporation**

The Johnson Corporation, 815 Wood St., Three Rivers, Mich.

ROTARY PRESSURE JOINTS • COMPRESSED AIR SEPARATORS AND AFTERCOOLERS
DIRECT OPERATED SOLENOID VALVES • INSTANT STEAM WATER HEATERS

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AMERICA'S LEADING SYNTHETIC DETERGENT

WASHES · WETS · DISPERSES · FOAMS · EMULSIFIES IN HOT OR COLD SOLUTIONS AT ANY pH

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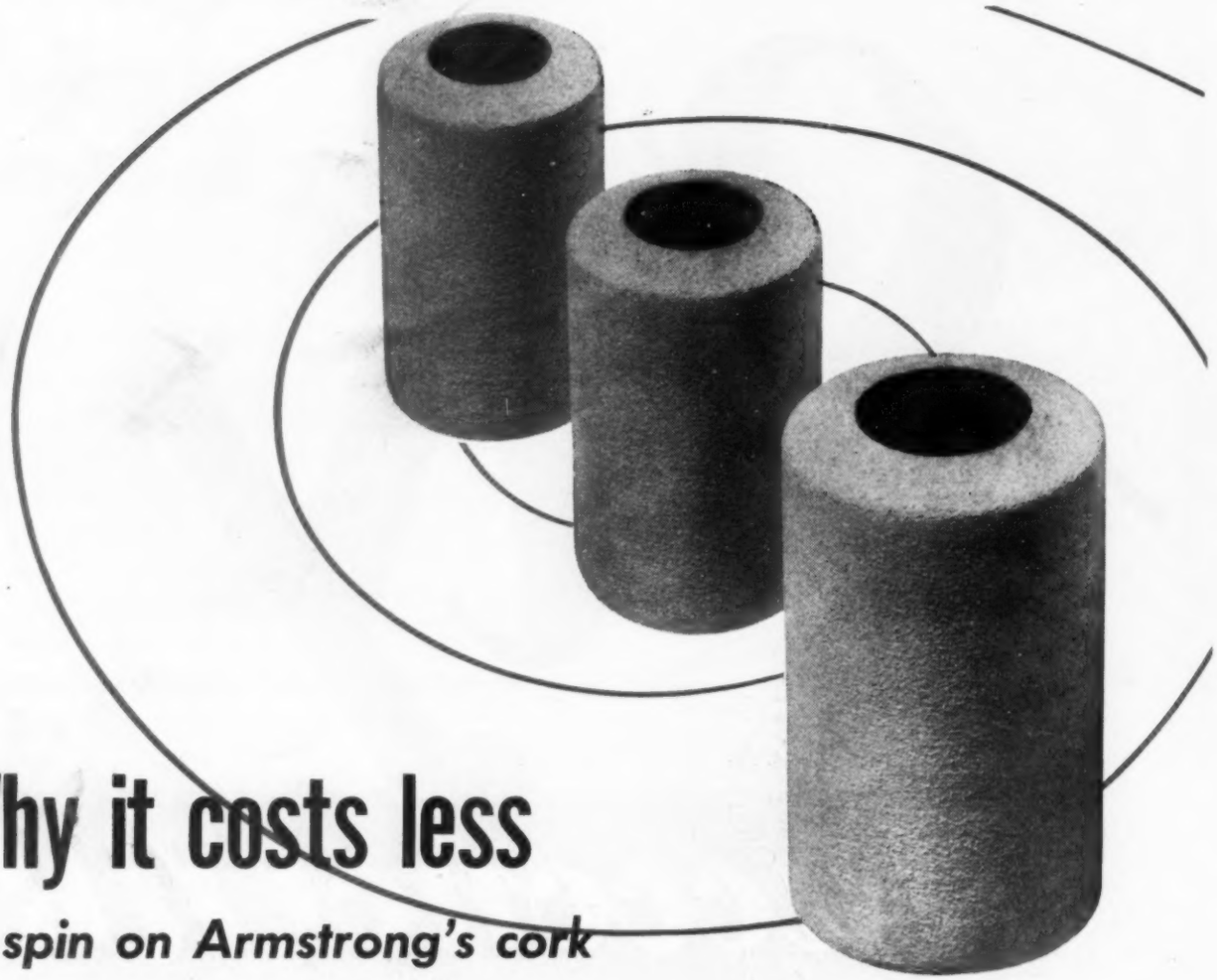
*Reg. U. S. Pat. Off.



Why it costs less

to spin on Armstrong's cork

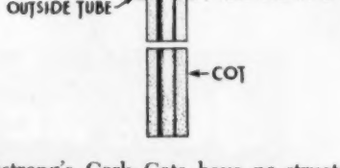
It costs less to spin on Armstrong's Cork Cots because these covers are low in initial cost and have an extra long service life. In addition, Armstrong's Cork Cots reduce assembly costs as much as 50% because they are seamless and pre-glued.

These cost-saving Cork Cots also eliminate eye-browing. Their highly frictional surface carries loose fibers well back on the clearer boards. Thus clearer picking is reduced and there are fewer slubs. At the same time, Armstrong's Cork Cots reduce clearer waste as much as 50%, giving cleaner running work.

Because Armstrong's Cork Cots are naturally resilient, they recover quickly from most hard ends and laps. They grip the yarn evenly and spin a strong, uniform yarn. Armstrong's Cork Cots can be rebuffed as many as five times.

Get all the facts about these economical cork cots from your Armstrong representative. Or write today to the Armstrong Cork Co., Textile Products Dept., 3605 Arch St., Lancaster, Pa.

Extrusion Process Produces Seamless Cork Cots



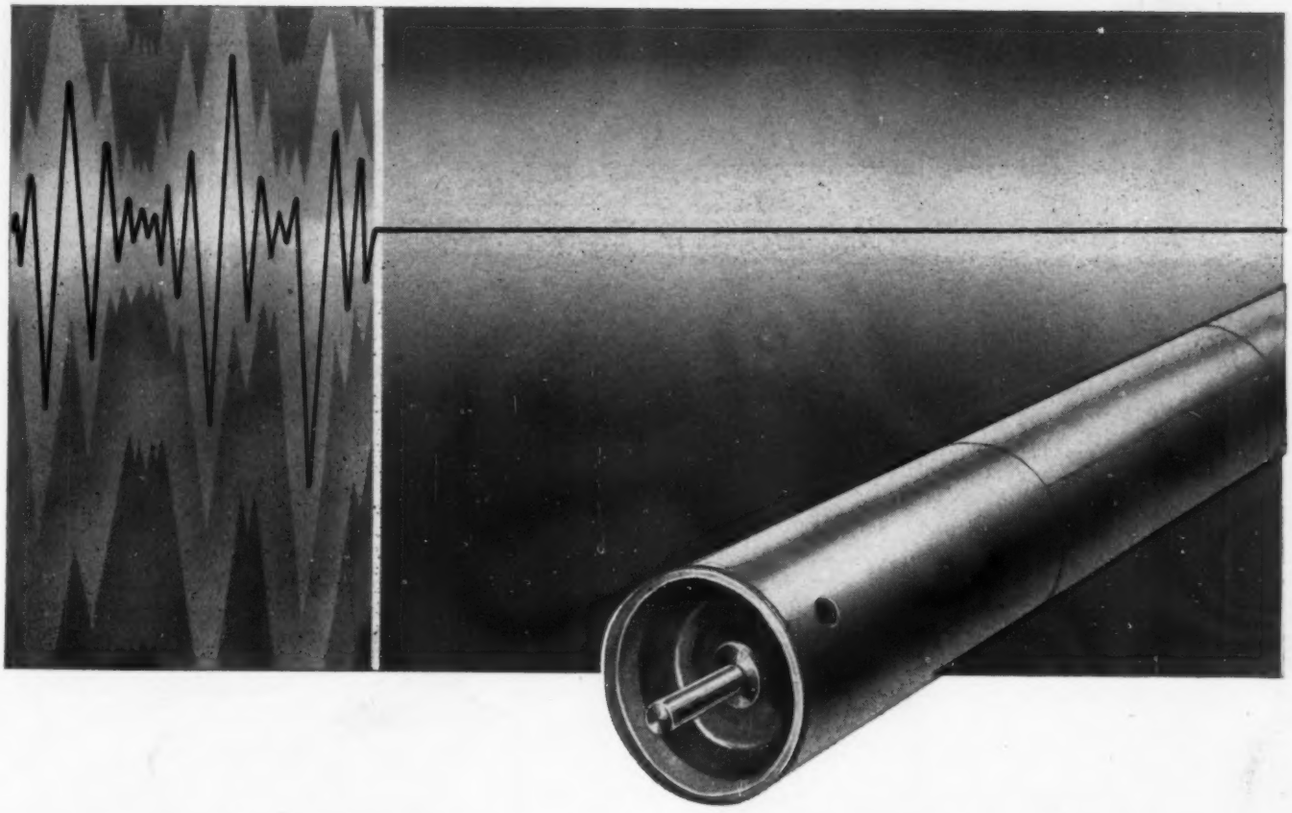
Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger yarn.

ACCOTEX IS A REGISTERED TRADE-MARK.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS



STEADY SPINDLE SPEEDS MEAN STEADY PROFITS

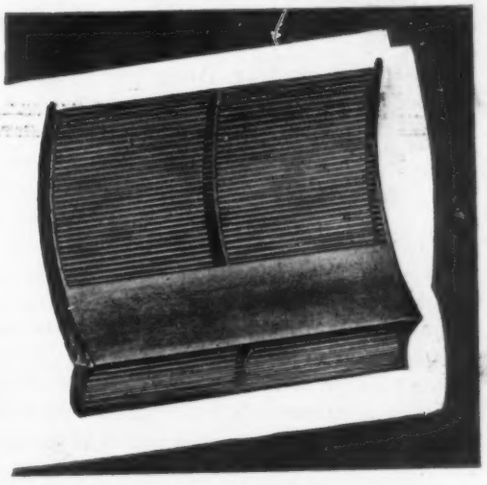
You get both with Jenkins DYNAMICALLY BALANCED CYLINDERS.

On these smoother running cylinders, every part is die cut and formed, assuring an absolute uniformity which has enabled leading mills to eliminate varying spindle speeds.

Also eliminated is the excessive wear on spindles, bolsters, bobbins, gears, bearings and journals which comes when cylinders are out of balance. No wonder more and more mills, with an eye on annual profits, are standardizing on Jenkins Dynamically Balanced Cylinders.

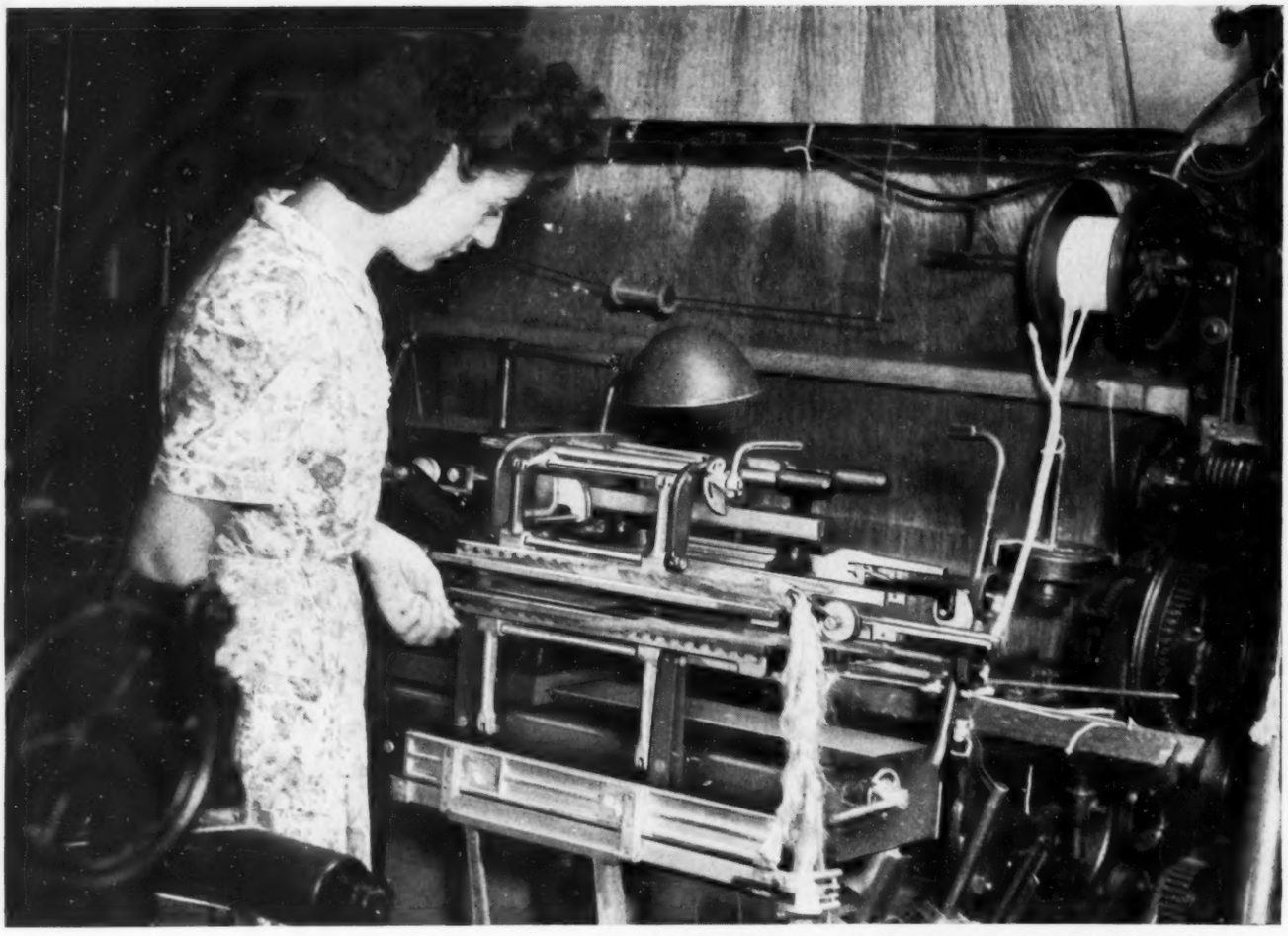
Let Jenkins' prompt service on new and rebuilt dynamically balanced cylinders and precision built standard or perforated card screens get you off to a smooth start. Place your order now for early delivery.

JENKIN'S *Dynamically Balanced* SPINNING CYLINDERS



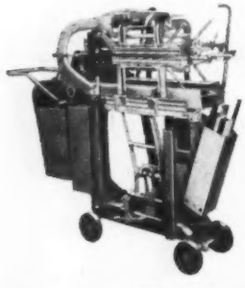
JENKINS METAL SHOPS *Incorporated*

GASTONIA, NORTH CAROLINA



PHOTOGRAPH TAKEN AT HAFNER ASSOCIATES, LONG ISLAND CITY, N.Y.

BARBER-COLMAN PORTABLE WARP TYING MACHINE TIES VELON TO COTTON ON JACQUARD LOOM — SAVES 80% OF DOWN TIME



Here is an excellent example of the versatility of the Barber-Colman Portable Warp Tying Machine, showing also its ability to reduce loom down time by a substantial amount. In this case two *different* types of yarn are to be tied together, since the finished cotton warp is to be replaced by a new velon warp. With hand tying-in as the only practical alternative, the machine shows a reduction of 10 to 12 hours in down time. Note also (from the table of data) the production of the machine — close to 3500 ends per hour *average* including loading, tying, and unloading time. Barber-Colman *Portable* Warp Tying Machines have proved to be profitable investments in hundreds of successful mills. They are easy to operate, adaptable to a wide variety of conditions, accurate, reliable, and have shown very low maintenance costs. Your Barber-Colman representative is able through experience to advise you regarding the possible applications in your mill — consult him at the next opportunity.

DATA FROM THE MILL

JACQUARD LOOMS

MODEL "LS" PORTABLE WARP TYING MACHINE

Loom Warp—Selvage 40s/2x2 Cotton, Body 60s/2 Cotton } 9216 ends

New Warp—Body .005" diameter Velon Yarn—9216 ends

Machine Tying-In Time, One Operator — 2½ to 3 hours

MANUAL METHOD

Hand Tying-In Time — 12 to 15 hours

AUTOMATIC SPOOLERS—SUPER-SPEED WARPERS—WARP TYING MACHINES—DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

YOU CAN BE **SURE**.. IF IT'S

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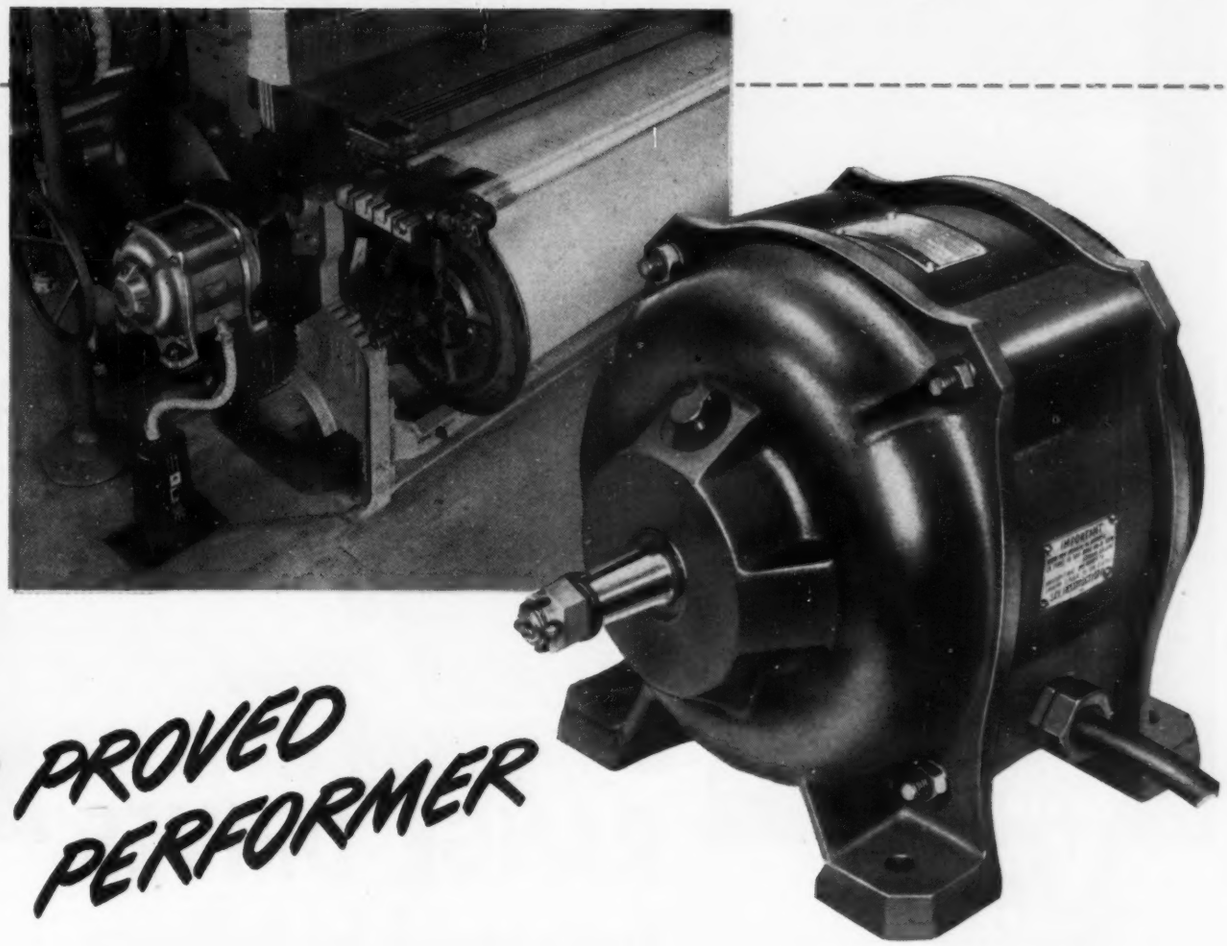

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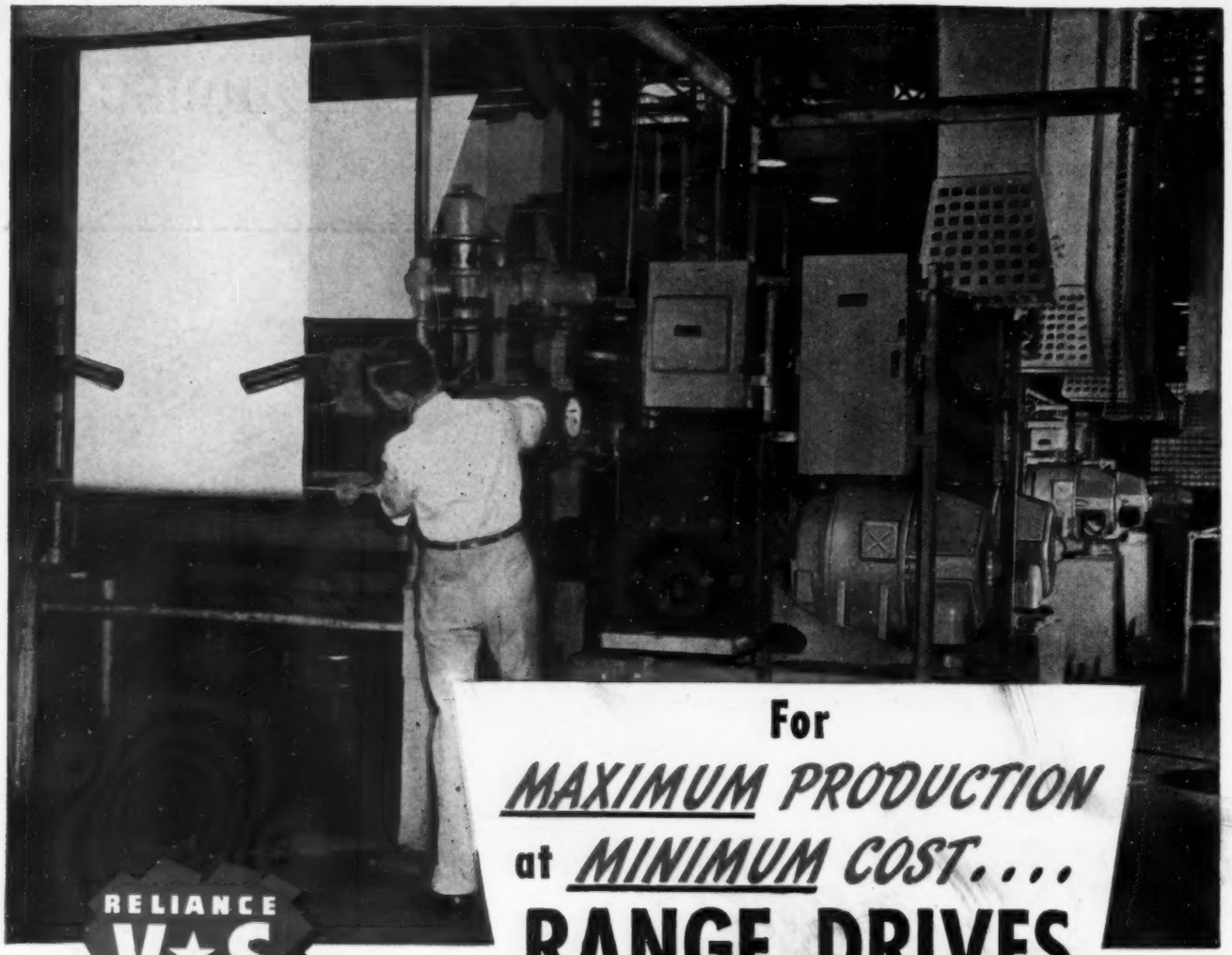
A forty-year partnership with the textile industry produces a lot of "know-how" in motor design. That's why the Westinghouse Loom Motor has a record of proved performance . . . why it meets every exacting requirement of modern loom operation.

Developed in co-operation with loom manufacturers, the Westinghouse Loom Motor gives you maximum output from the loom with minimum energy from the line. Its co-ordinated flywheel effect, ability to withstand wide load fluctuations and cool operation all combine to maintain a new high in weave room efficiency.

When buying new looms, specify Westinghouse Loom Motors and be sure. Or, if you are using motors not specifically designed for loom service, it will pay you to replace them with Westinghouse Loom Motors. They fit any loom, new or old.

Get the facts today. Call your nearest Westinghouse office and ask for Booklet B-3778; or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-30001

Westinghouse
LOOM MOTORS



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For *MAXIMUM PRODUCTION* at *MINIMUM COST....*

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Engineered by Reliance

The Reliance V★S System, providing quick, smooth starting, stopping and regulation of speed from A-c. circuits, is being employed in more and more range drives today for two reasons. It assures the highest possible rate of production on any given range—and does this at lowest possible cost! The V★S System is flexible—can be employed in variations to suit the requirements of any job. In the hands of Reliance engineers who have the know-how of over 30 years of specialization in the scientific planning of range drives, this system can make your investment pay unexpected dividends. A Reliance Application Engineer will work with you in modernizing present equipment or planning the best drive for new equipment. Just phone your nearest Reliance office.

Sales Representatives in Principal Cities

RELIANCE ELECTRIC AND ENGINEERING CO.

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Rayon Reports

Issued Monthly by American Viscose Corporation, New York, N.Y. MAY, 1949

Plant Modernization, Research Developments Described in 1948 Avisco Annual Report

The 1948 Annual Report of American Viscose underlines the program of the Corporation to improve production. The Report shows that expenditures during 1948 for plant and equipment amounted to $19,835,000. The larger expenditures were for:

1. ***Completion of the Meadville plant expansion project.*** **This project increased the plant's capacity by approximately 75%.**
2. ***Installation of 51 additional spinning machines at Marcus Hook.*** **Completed in October, 1948.**
3. ***Modernization of and additions to steam and electrical generating facilities at the Lewistown and Parkersburg plants.***
4. ***Rebuilding spinning machines at the Lewistown and Parkersburg plants.***
5. ***The completion of a new water supply system and filter plant for the Sylvania Division at Fredericksburg, Virginia.***

Many other projects were also completed or in progress at the end of the year. Among those in progress were the installation of facilities to further expand production of rayon staple at Nitro and Front Royal and increase the production of cellophane at Fredericksburg.

Research and Development

Cited as the outstanding result of the Avisco research program in 1948 was the development of the "Filamatic" process, a new continuous-spinning method for the manufacture of viscose rayon yarns. Fast, small, and fully automatic, the new machines speed production, reduce handling and produce a high quality product.

Another important recent development is the disposable paper cover for yarn in cake form, exclusive with Avisco. This cover is more economical and convenient for customers and replaces the knitted covers used heretofore.

Crimped viscose rayon staple introduced in 1947 continues to prove its value. It gives soft-nap fabrics greater bulk without increase in weight, and a livelier hand to high-twist fabrics.

Details of these advances and other developments of interest to the textile industry are contained in the 1948 Annual Report of American Viscose Corporation. Copies available on request.

Manufacturer of hose knitter supplies Avisco tire yarn with his machine

The Fidelity Machine Co. of Philadelphia supplies four ten-pound cones of Avisco tire yarn with each of its standard hose reinforcement machines. The Company reports that after tests they found Avisco tire yarn (2200/980) unequalled in performance and are recommending it to all their customers.

RAYON 20 YEARS AGO

NEW YORK, May 1929 — Consumption of rayon in the fancy sweater field is on the increase. One of the reasons for its popularity is the attractive color effects which can be achieved.

WASHINGTON, D.C., May 1929 — An exhibit which tells the story of viscose rayon manufacture has been set up in the National Museum.

BERLIN, May 1929 — Contracts have been received here for erecting and equipping two rayon plants in Soviet Russia.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

Standard Oil spindle oils help boost yarn production by permitting *heavier packages* and *higher* spindle speeds without sacrifice of quality. Made in a complete viscosity range, there's a Standard Oil spindle oil to meet the requirements for your spinning, throwing, spooling and twisting machines . . . and you can rely on them, not only to make top spindle speeds possible, but to cushion against vibration, and resist hunting and lagging. There is an experienced Standard Oil lubrication engineer in your area. He will gladly study your lubrication requirements, recommend the right lubricant for each type of equipment, and prepare lubrication schedules. His specialized experience in the textile field will prove helpful to you.

boost production

STANDARD OIL COMPANY INCORPORATED IN KENTUCKY

How does Foamglas improve mill operation?

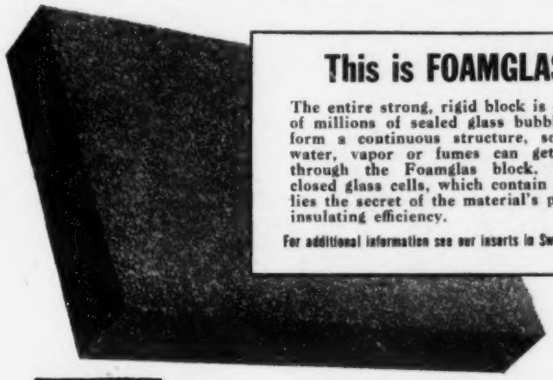
It helps control mill climate permanently

● It takes a really rugged material to do a permanent insulating job in textile mills. For high humidities, corrosive fumes, acid atmospheres and other hazards make short work of most organic, fibrous and granular materials.

But PC Foamglas, since it is a true glass in cellular form, is vaporproof, fireproof, acidproof and verminproof. With it you need not fear costly repairs, maintenance or replacements. Foamglas retains its original insulating efficiency *permanently*, when installed according to our recommendations and specifications.

On roofs and in floors, walls and ceilings of many textile mills, Foamglas withstands humidity, helps to maintain desired temperature levels, thus minimizes condensation, prevents sweating. That means greater comfort for mill workers, less damage to goods in process, trouble-free operation of precision machines over longer periods.

Our insulating engineers will be glad to consult with you, to determine where and how you can use PC Foamglas to your best advantage. Meanwhile, look over our booklets on the general use of Foamglas. Just mail the convenient coupon and we shall be glad to send you free copies.



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The entire strong, rigid block is composed of millions of sealed glass bubbles. They form a continuous structure, so no air, water, vapor or fumes can get into or through the Foamglas block. In those closed glass cells, which contain inert air, lies the secret of the material's permanent insulating efficiency.

For additional information see our inserts in Sweet's Catalogs

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Name_____

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FOAMGLAS INSULATION

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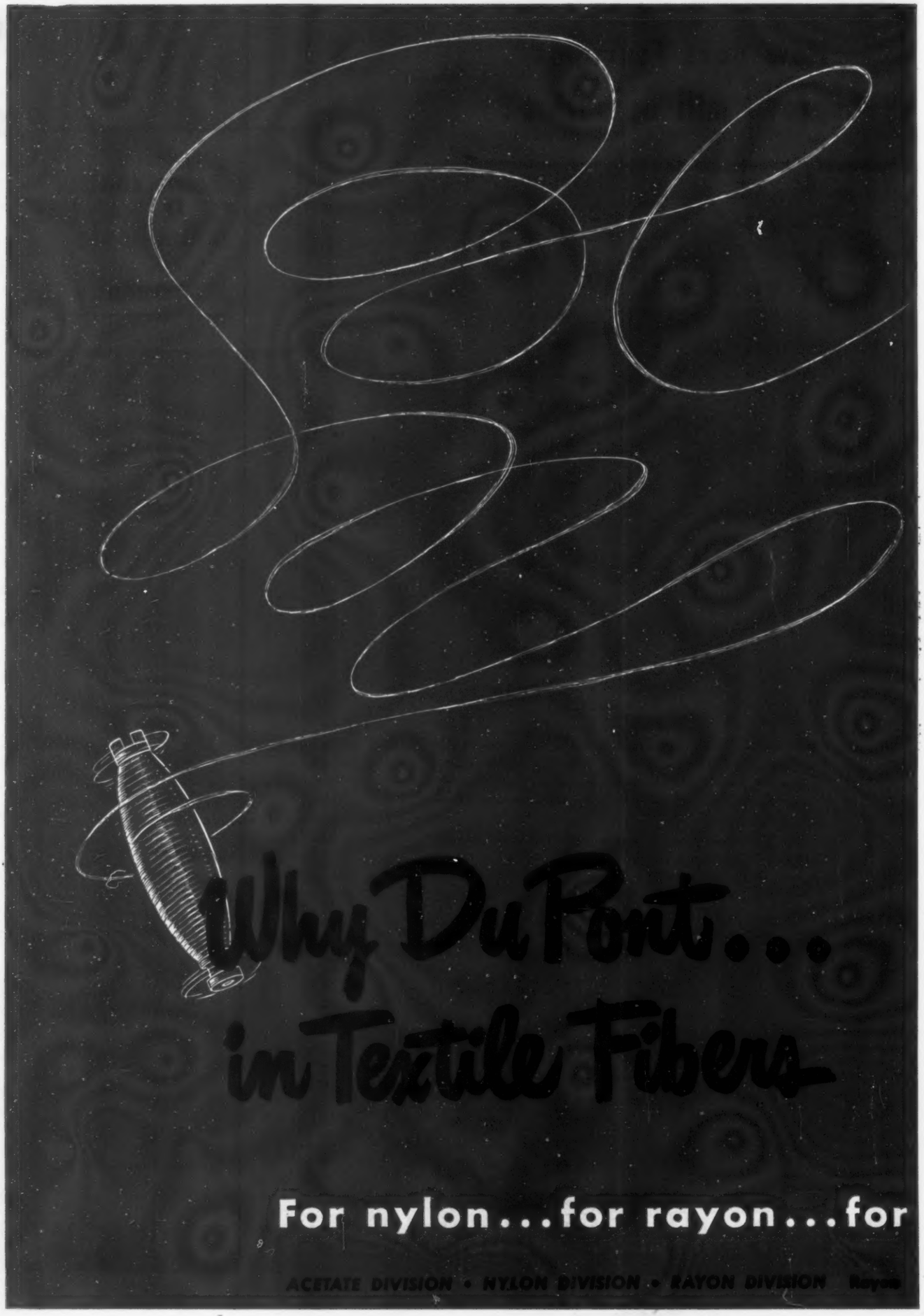
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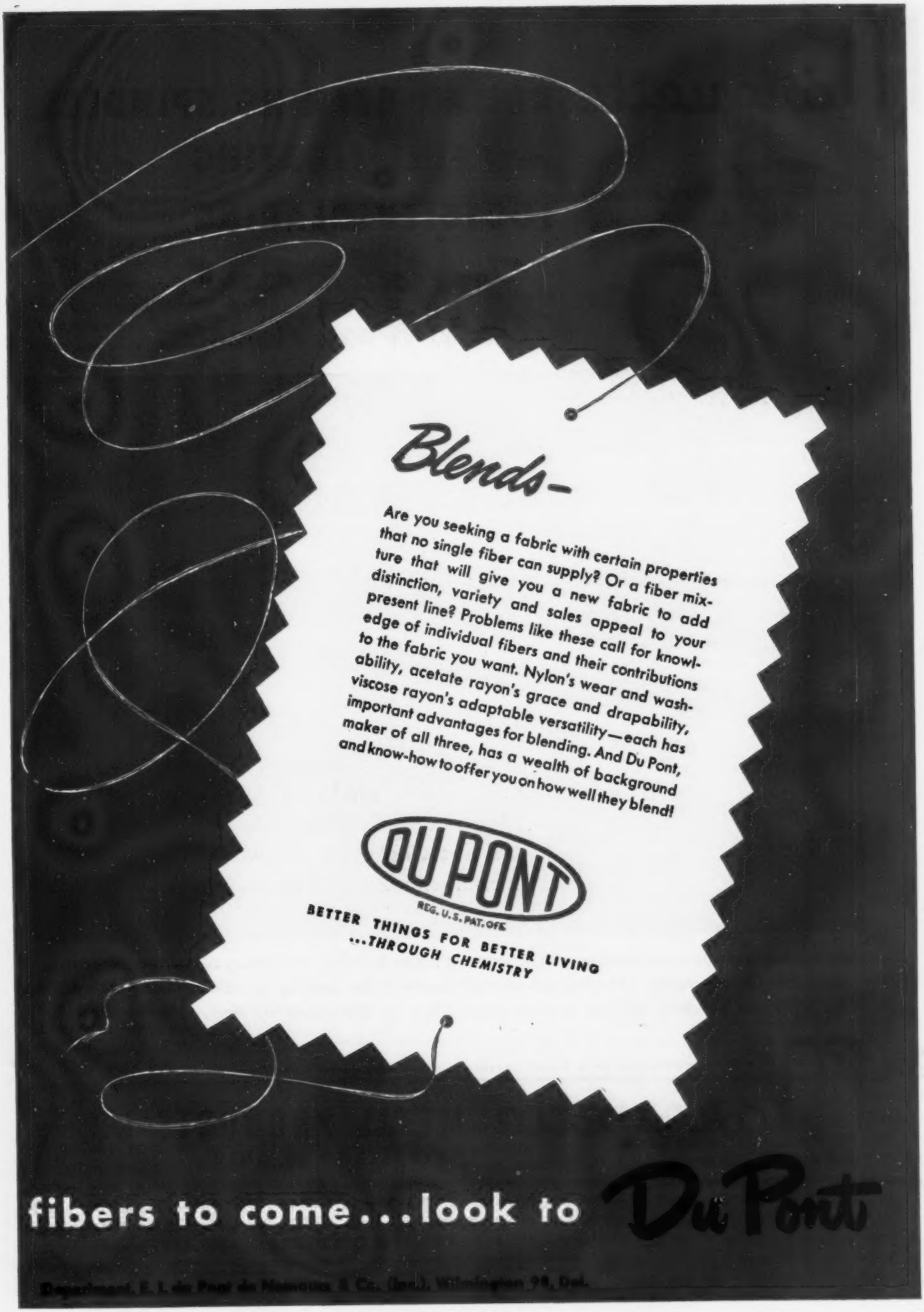
in Textile Fibers
For nylon...for rayon...for
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION


Blends—
Are you seeking a fabric with certain properties that no single fiber can supply? Or a fiber mixture that will give you a new fabric to add distinction, variety and sales appeal to your present line? Problems like these call for knowledge of individual fibers and their contributions to the fabric you want. Nylon's wear and washability, acetate rayon's grace and drapability, viscose rayon's adaptable versatility—each has important advantages for blending. And Du Pont, maker of all three, has a wealth of background and know-how to offer you on how well they blend!
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...THROUGH CHEMISTRY
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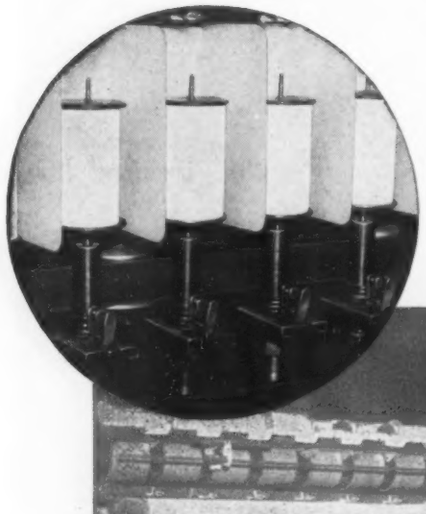
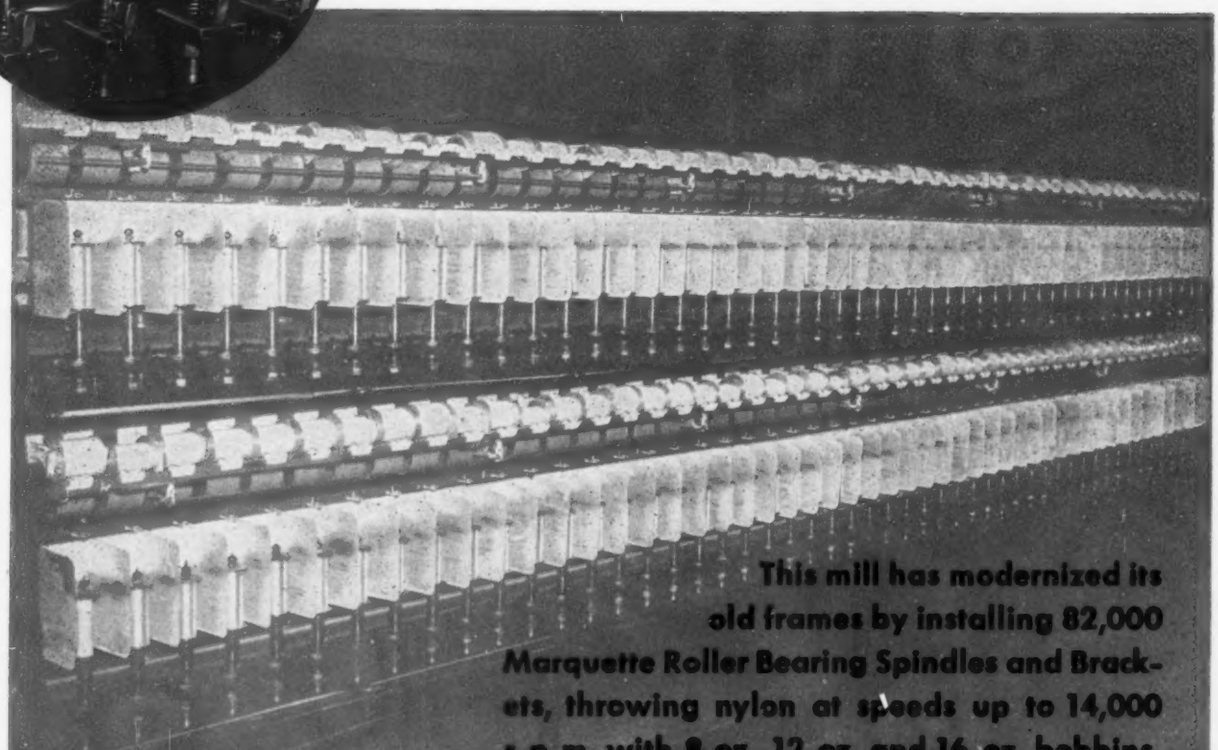
For Cotton, Rayon, Nylon, Wool, Worsted





This mill has modernized its old frames by installing 82,000 Marquette Roller Bearing Spindles and Brackets, throwing nylon at speeds up to 14,000 r. p. m. with 8 oz., 12 oz. and 16 oz. bobbins.

By modernizing your old frames with Marquette Roller Bearing Spindles, you too can increase production by operating at higher speeds. Marquette Roller Bearing Spindles can be obtained by all frame builders. Ask our nearest sales office for illustrated catalog, or write direct.

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Vol. 113
No. 5

Textile Industries

May
1949

The Horns of a Dilemma

DURING the First World War, military demands for textiles caused most mills to go on two-shift operation. Before the war there were very few plants running more than one shift. This tremendous increase in output on the two-shift schedule resulted in a very rapid extinction of any postwar shortages and a tremendous over-production, which ultimately brought about a shrinkage of about one-third of the total number of spindles in the United States.

By the time the Second World War started, the textile industry had fairly well stabilized itself on the basis of two-shift operation but just as the First World War required extra shifts to meet military needs, so did this second conflict step up demand, and a very large proportion of the mills are now running three shifts, though recently on a reduced basis. The owners of these mills are just as reluctant to abandon the third shift as they, or their predecessors, were to abandon the second shift after the First World War.

This reluctance leaves the textile industry between the proverbial horns of a dilemma.

After the First World War the industry faced this same dilemma, and the solution was the liquidation of about 12 million spindles and the settling upon two-shift operation as more or less standard. This still left a substantial production potential to meet the needs of World War No. Two.

It would be very risky to solve the current problem by further liquidation, because if and when another war starts, we will need just as much textile production as we did in the last one, and if all of a smaller number of mills are already on three shifts, the only way to get this production will be to build new mills, which is not a practical solution.

Textiles in war are just as vitally essential as ordnance or airplanes, but textile machinery can not be produced in an emergency as rapidly as machine tools can be turned out. A manufacturer of vacuum sweepers, washing machines, typewriters, or any of dozens of similar items of peacetime production can be changed over very quickly to making parts for guns, airplanes or other military apparatus, but from the intricate and peculiar nature of textile machinery, it is very difficult to change over manufacturing plants quickly to make it. Whereas there are dozens of manufacturers of machine tools, there are only three concerns producing cotton spinning frames and cards, and two which manufacture cotton looms in any quantity.

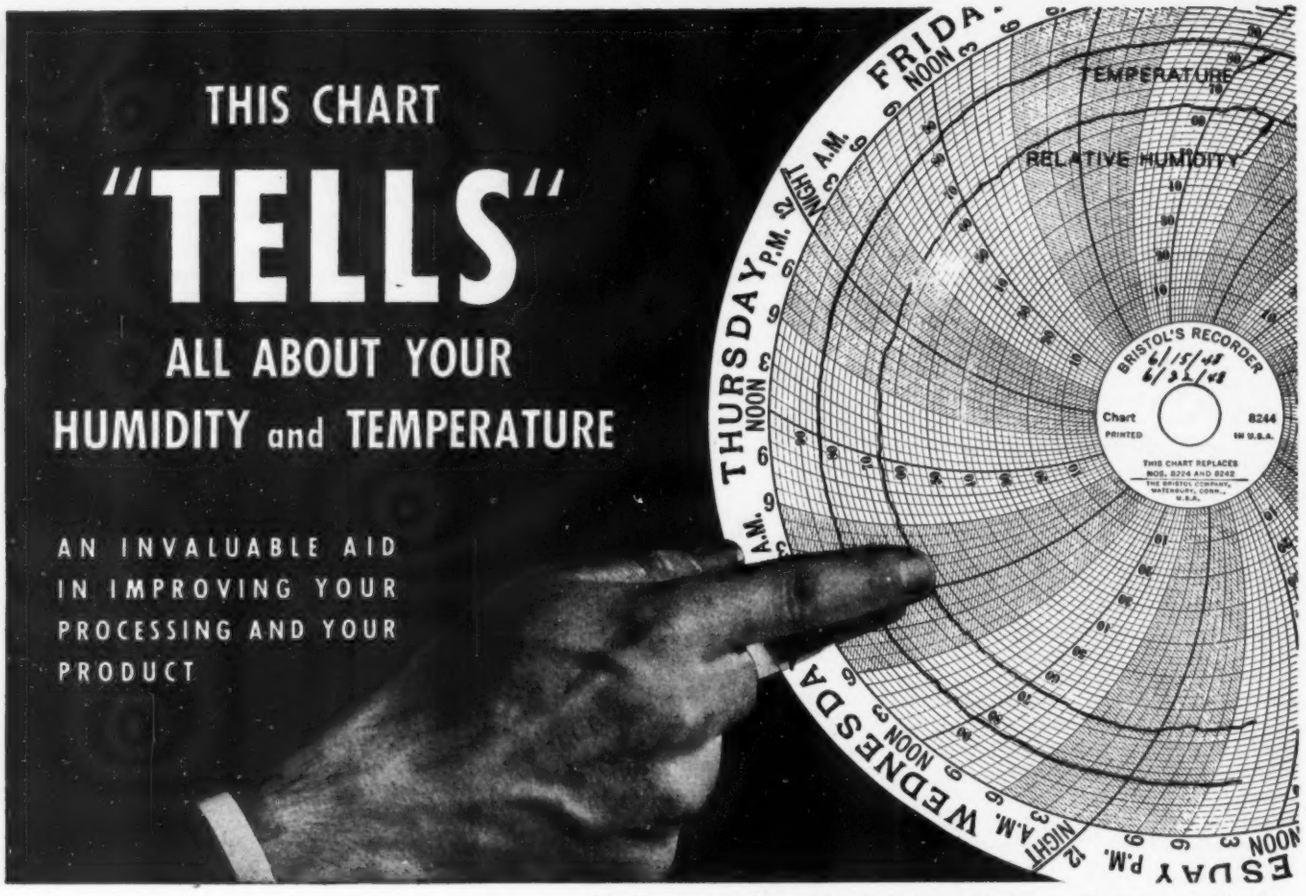
The manufacture of woolen and worsted machinery is equally, if not more, restricted. It would be entirely too risky from a military standpoint for this country to permit enough liquidation of its textile plants to stabilize this industry on three-shift operation.

It would be very risky to solve the current economic problem by liquidation, because if and when another war starts, we will need just as much textile production as we did in the last one.

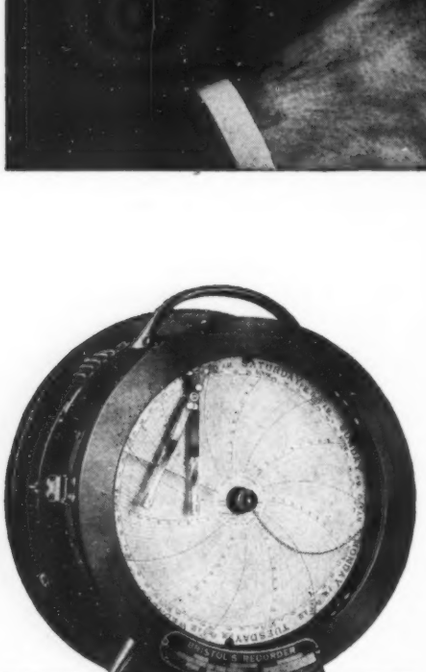
It seems very likely therefore that if we slide deeper into the present cycle of inactivity, and if the demand for textiles settles down to about what can be expected for the next several years, some governmental intervention will be suggested to stabilize the industry. There is little in the past experience of any branches of the textile industry which indicates that it stabilized itself, short of liquidation, which almost everyone agrees would be militarily dangerous.

Our experience in the last war showed that we had none too much textile equipment to take care of a first-class war, and a great deal of antiquated, worn-out machinery was put back in service to help provide for military needs. We could not possibly afford to enter another war with a vital textile industry worn out, impoverished, and dilapidated from years of attrition.

On the other hand, if and when we have a war our essential industries should be in the very pink of condition. It is quite certain that if all textile mills now on three-shift operation are kept on it, there is going to be a long period of starvation while the weeding out process junks the marginal mills, and while this would normally be a natural and healthy process to get the industry trimmed down to the proper size to take care of normal demands, it would be very unwise to permit ourselves to wind up with a textile industry incapable of rapid expansion of production in war.



According to the engineer of the full-fashioned silk hosiery mill who sent us this chart, Bristol's Thermo-Humidigraph helps "maintain an even temperature and humidity, thereby saving money by cutting down waste and giving a more uniform product".



Bristol's Thermo-Humidigraph records both the relative humidity and temperature of the surrounding air.

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Approximate net weight, 12 lbs. The best your money can buy in a portable, simple, compact, lightweight relative humidity and tempera ure recorder. Easy-to-read 8 inch chart.

This Bristol's Thermo-Humidigraph welcomes your closest scrutiny. PORTABLE, compact, lightweight, you can place it anywhere — indoors or outdoors — and it will give you an accurate visual picture of surrounding humidity and temperature conditions.

Bristol's Thermo-Humidigraph is *direct reading.* Just a glance at the round chart, and you at once know the humidity and the temperature. No need for referring to humidity tables. No computations. No wet bulb — no fussing. This Thermo-Humidigraph is as easy to read as your watch. Measurement is by means of a new, improved hygroscopic recording element.

The following comments are typical:

WOOLEN MILL: "Thermo-Humidigraph gives us a check on the machines used for correcting the humidity . . . the value of constant humidity is that we can keep a better check on the weight of the yarn."

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Order now, while you think of it — under our complete satisfaction guarantee.

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COTTON: Carding, combing, roving, spinning, weaving.

RAYON: Spinning, twisting.

SILK: Dressing, spinning, throwing, weaving, knitting.

WOOL: Carding, spinning, weaving.

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BRISTOL'S Thermo-Humidigraph

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THE HANDY PORTABLE DIRECT-READING RELATIVE HUMIDITY RECORDER

The obvious answer to this military problem would be to cut the entire textile industry back to two-shift operation, but this brings up the very serious problem involved in throwing an immense number of people out of work. This problem will be considered political rather than economic, because if the textile industry can only sell a certain quantity of goods, it can only operate a certain number of hours and pay a certain quantity of wages, which will be divided up among a greater number of persons on three shifts running short time than on two shifts running full time. The amount of money coming into any textile community would be exactly the same.

The political implications, however, of throwing an immense number of people out of employment are certain to lead to serious difficulties. A man who is working four days a week, or three days, is personally better off than if he isn't working at all, and he can always hope that things will pick up and he will get full time work. The labor unions are certainly going to put up a terrific fight over any general attempt to cut out the third shift.

Back in the early days of the New Deal, when we had shifted from 55 hours a week to 40 hours, there was a great deal of talk on the part of prominent labor union leaders about a 36-hour week or a 30-hour week, and we can expect to see these proposals revived just as soon as the coming depression begins to pinch severely. The labor union people are going to come up with their old argument that if there isn't enough work to keep everybody busy 40 hours a week, then we should have a 36-hour week, or maybe a 30-hour week, but of course they will want a wage increase so that the man working 36 hours or 30 hours a week will get just as many dollars for his diminished production as he did before for the greater production.

This was what happened in 1933 when the late lamented NRA was put into effect. It was inflation, pure and simple, but if a depression really gets tough, the politicians are going to rush in with more inflation, which is the only remedy they ever have to offer for economic problems, and the shorter work week at the same or better pay is fairly certain to be one of the inflationary schemes proposed.

If we do adopt this inflationary solution of the textile problem, we can avoid the junking of a good many mills which may later be urgently needed in the case of a war, but we are going to increase substantially the prices of textile goods, and that will further restrict sales so that there will be added demands for shorter hours and higher wages, which will result in higher prices and further restriction of sales. Maybe we could keep this up until nobody would want any textile goods at all. Who knows?

Most of the unionized textile industry labor is subservient to the CIO, and only two or three people have to make up their minds what is going to be done by this union. There are thousands of executives in the textile industry who have got to make up their minds about what they want to do.

The advantage of initiative is all on the side of the CIO, and if things get tough enough in the textile industry and the CIO pops up with a plausible demand for a 24-hour week and a 66 per cent pay increase, the owners of the textile industry had better have some reasonably sound proposal with which to counter this.

The Federal government has developed during the past 15 years pathetic faith in the efficacy of inflation as a remedy for all economic problems. We have probably got quite a number of lawmakers who wouldn't even know that a 30-hour week with a wage increase would be inflationary, and a 24-hour week worse.

If a depression sets in and gets tough, politicians may suggest the shorter work week at the same or better pay. Owners of the textile industry would do well to have some ideas about a sound program of their own to counter this inflationary move.

Anyway, here is a very serious problem that everybody in the textile industry should be doing some thinking about and reaching some conclusions about before the problem pops up in Congress as a political matter demanding immediate attention.

Back in 1933, the country embarked on the dubious course of having problems of this sort settled by the Federal government, so it is perfectly natural for this problem to wind up in Congress sooner or later. The people who own and operate the textile industry would therefore do well to have some ideas about what they want done and what they are willing to fight for, or they are going to find that some smart labor union operators have already got a program of their own oiled up and ready to run.

Instead of cutting hours, raising wages, and thereby cutting our economic throats, a far more sensible program from the economic viewpoint would be to work harder and longer, increase our productivity, and try to get our costs down to where we can get some legitimate world-wide business.

If we want to establish world trade, it has to be on a basis which will make it possible for the rest of the world to trade with us. If we keep demanding more and more for less and less, we are certainly not going to make it easier for the rest of the world to trade with us.

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Manufactured in the South — For the South!

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NEWS in BRIEF

Alabama Public Relations Meetings. Under the auspices of the Alabama Cotton Manufacturers Association, public-industrial relations conferences are being held in textile centers. Meetings have been well-attended.

Union to Use Company Meeting Hall. When the only meeting hall available in a mill village is company-owned, the company must make the hall available to the union if the union requests it for organizing purposes, according to a decision by the U. S. Supreme Court. This decision reversed the earlier Circuit Court decision.

Sheet Quality and Price Balance. Retailers are said to be finding that the best balance between quality and price in the sheet market for their customers is in the 140 count muslins. It is expected that when sheet prices reach the stabilization point, most consumer's sheet purchases will be concentrated on this grade.

Textile Institute (Great Britain) and American Liaison. Question of closer liaison between the Textile Institute, with headquarters in Great Britain, and its members in the United States is being studied. R. J. Kerr-Muir of Lustre Fibres, Inc., is chairman of the panel which will consider means of closer collaboration.

Canadian Woolen and Worsted Production. Production of woolens and worsteds in Canada was lower in 1948 than 1947; imports increased for the same period. The supply of rayon, nylon, and silk fabrics available in Canada showed a 25% increase over 1947, the previous peak year.

Stable Employees Detected by Visual Testing Device. The apparent ability to select stable employees through a visual testing device has been reported by a personnel director. In a check of payroll savings bond deductions in relation to visual standards, it was found that an overwhelming majority of those employees "eyefully" able to do the job are making more bond deductions than those who do not meet the visual standard.

Columbia U. to Study Flammability. A 5-year project in the study of flameproofing of fabrics will be conducted at Columbia University, jointly sponsored by the Quartermaster Corps and the Office of Naval Research. Army and Navy are said to be concerned about the danger of casualties from fire in the event of atomic warfare.

Kenaf. Kenaf is now being grown successfully in Cuba and El Salvador as a result of collaborative work between agricultural scientists of the U. S. and Latin American countries. Kenaf is an effective substitute for jute fiber.

Foot Clinics. The record on a foot clinic conducted by one textile plant showed that 17% of

WOMEN INCREASE PRODUCTION IN BRITAIN

"One of Britain's problems in gearing up her production drive has been to persuade the women to return to the factories," according to a story by Minnie Pallister, British journalist.

Overtime was not well received by the women operatives, so a 10 per cent increase target was set without overtime —trying day nurseries, meals for school-age children, reserve rations for operatives, time off to do shopping, a four-hour evening shift, two afternoons off per week, busses home for midday meal, and "factory conferences" over the weekend at Grange-over-Sands, a beautiful hotel where operatives and management discuss common problems.

Complaints are quickly dealt with, i.e., weavers were compensated when faulty yarn from spinning reached looms and lowered production.

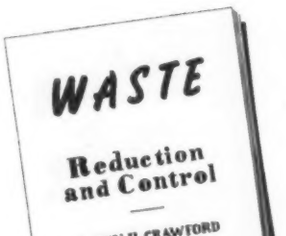
Less Waste Means Lower Costs

Waste Made BEFORE Service

Waste Made AFTER Service

We Guarantee These Results:*

- Less Waste
- Closer Control of Waste
- Better Handling of Waste
- Lower Unit Cost



FREE copy of 20-page reprint booklet upon request (limited to mills in U. S. only).

One Mill Man says: . . . "The actual results in waste reduction are gratifying, and any way we figure it, we save the cost of your work very quickly . . ."

Another says: . . . "First I would like to say the program was a complete success . . . Our waste has now been reduced over 2% and the reduction is continuing . . . ."

Inquiries invited (service confined to domestic mills)

* *Names of mills using our service furnished upon request.*

SOUTHEASTERN ENGINEERING CO.

West Point, Georgia

"Specializing in Waste Reduction and Control"

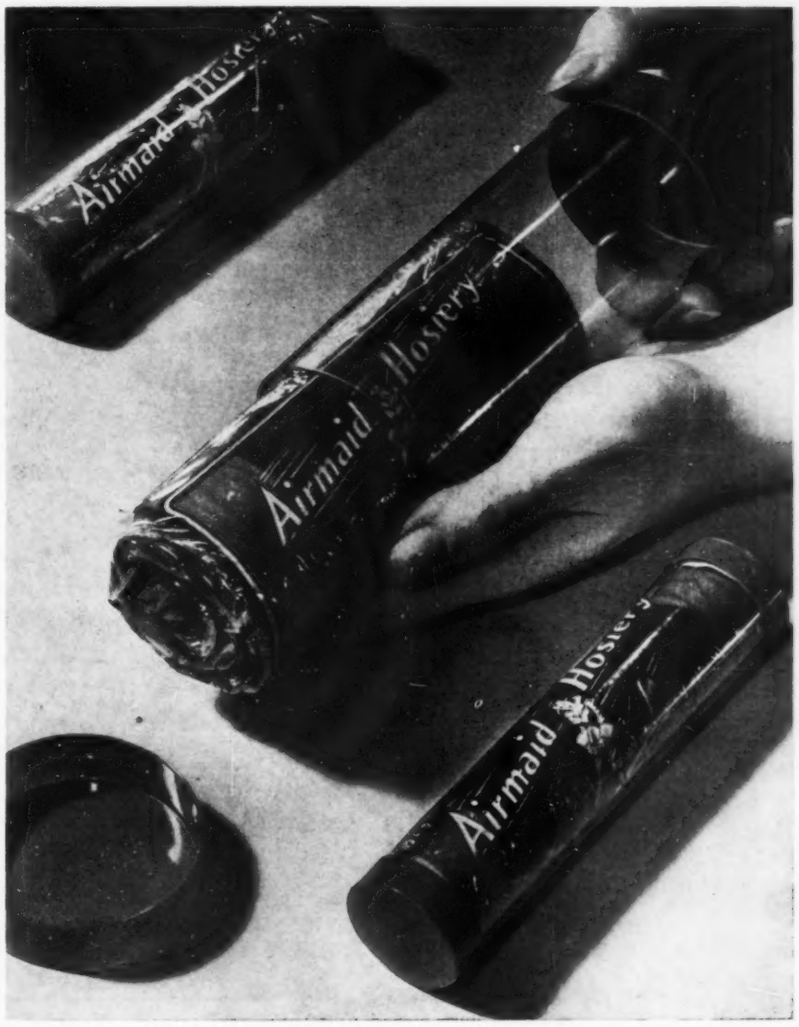
those passing through the clinic required medical care of the feet. The clinic was considered educational for employees; in the future it is thought that the employees will seek medical care on their own volition. In one instance, civic-minded non-textile citizens approved of the foot clinic and extended the services under their auspices. Advice offered: Get a doctor with a good personality.

Slump in Double Woven Fabric Sales. Reliable spokesmen of the double woven fabric glove industry claim that the decline in sales characteristic throughout 1948 is here to stay for an inestimable length of time. Production has been cut back at least 25 per cent in some quarters, while some firms are manufacturing for inventory primarily. No assignable causes for the slack in business activity have been detected other than the generally soft market for industrial and consumer commodities. It is questionable whether extensive promotions will remedy the situation.

Johnson On Wool Prices. European countries are purchasing wools for speculation, according to Charles F. H. Johnson, Jr., vice-president and general manager, Botany Mills. In 1948 American buyers were forced to purchase Australian fine wools from European countries at advances over prices paid at British Dominion auctions, Mr. Johnson states. This deprived the British Dominion of badly needed dollars, transferring them to the European countries which were able to buy these wools in the first place by credits furnished by the United States government. The price of wool will be determined by the size of the speculative inventories now being held throughout the world. No definite figures are available on the quantity of wool held specifically for future rises in value.

Outlook for Small Manufacturer. Henry Hafner, Jr., of Hafner Associates, sees an encouraging volume of business for the smaller manufacturer in the year ahead. Mr. Hafner contends that the high degree of flexibility of the "quality" type small mill enables rapid change to new lines. This factor of adaptability to erratic demand will prevent little-business machinery from standing idle. Capable of producing for a wide diversity of orders, these manufacturers may fare better in a stormy economic cycle than the huge integrated corporations. Conversely, in periods of peak demands the volume producer is in a more stable position due to characteristic efficiency of plant operation.

Production Cut-Backs Impose Hardships on Mill Towns. Discreet questioning of merchants and residents in New England mill towns and adjacent communities reveals that the general rolling back of



AND NOW, HOSIERY IN TUBES

Airmaid hosiery comes in transparent, seamless Tenite tube containers; is sold nationally through drug stores. Small and compact, it can be carried in the customer's handbag continuing its usefulness as a traveling case or stocking holder for the drawer. Containers are six inches long, extruded by Extruded Plastics, Inc., Norwalk, Conn., in diameter sizes to accommodate one or three pairs of stockings. Tenite is a product of Tennessee Eastman Corporation, Kingsport, Tenn.

settling decanting filtration . . . are out

when you use Hooker Sodium Sulfide

In these days of soaring costs, few rayon manufacturers can indulge themselves in the luxury of time wasting, costly preparation of desulfurizing baths—especially when you can save all this with Hooker Sodium Sulfide. Hooker Sodium Sulfide is so free from impurities (an iron content as low as 8ppm. max.) that rayon plants are using the solution directly from the dissolving tanks. In some plants it is reported that they have added Hooker Sodium Sulfide directly from the drum into the desulfurizing bath. In either case the time consuming and costly process of settling and decanting or filtration are eliminated. There is no loss of chemicals in the disposal of sludge and no special equipment is required for disposal of high sulfide sludge wastes.

Fixed controlled Alkalinity saves Caustic Soda . . .

Another saving for you when you use Hooker Sodium Sulfide is in the caustic soda used for maintaining alkalinity of desulfurizing bath. Hooker Sodium Sulfide has a fixed controlled alkalinity. This means a substantial economy in the amount of caustic soda required to adjust alkalinity within the limits required.

If you have not yet tried Hooker Sodium Sulfide for your desulfurizing baths, we suggest you send for a trial shipment. It is sold in 90 and 350 pound steel drums.

SPECIFICATIONS:

HOOKER SODIUM SULFIDE, Na_2S

a light yellow colored solid in flake form, soluble in water, slightly soluble in alcohol, insoluble in ether.

ANALYSIS

Sodium Sulfide	60 to 62%
Sodium Chloride	1.5% Max.
Other Sodium Salts	2.0% Max.
Iron	8ppm. Max.
All other metals	1ppm. Max.
Water of Crystallization	36.5 to 34.5%

HOOKER ELECTROCHEMICAL COMPANY

14 Forty-Seventh St., Niagara Falls, N. Y.
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

7-353

Caustic Soda **Muriatic Acid** **Chlorine**

Paradichlorbenzene **Sodium Sulfide** **Sodium Sulfhydrate**

textile production in the area is adversely affecting it's economic health. Small businesses and trading are virtually at stand-still. The creeping inactivity is giving entire sections depression year complexions reminiscent of the early 30's. The situation may be proving the argument of many economists that "production is the backbone of prosperity, and cut-backs in production only breed further cut-backs. Work stoppage wipes out purchasing power, which in turn diminishes the markets for units still in production."

States Can Impose Stricter Union Rules. The U. S. Supreme Court has upheld the right of states to impose stricter rules governing union security contracts than are provided in Federal laws. This 7 to 2 decision affects textile manufacturing plants located in states which have enacted laws prohibiting closed shop contracts and other types of union security agreements. The limitation placed by the decision was that "the state shall not impose a policy inconsistent with national policy."

Clemson to Equip Dyeing and Finishing Lab on Burlington Gift. With the rapid growth of textile finishing operations in the South, Clemson (S. C.) College will equip a dyeing and finishing laboratory in which actual productive processes and problems will be duplicated. Funds for the project ($10,000) were donated by the Burlington Foundation, a trust established by Burlington Mills Corporation.

Half-Million Dollar Wool Promotion. The Wool Bureau, Inc., will spend approximately $500,000 during 1949 in the interests of wool and American wool products, especially promoting wool clothing for men and women. Funds have already been collected. A technological bureau will be established to survey and publish available data on wool textile production techniques.

Converting Industry. A booklet prepared by the National Cotton Council, Memphis, Tenn., entitled "Cotton in the Converting Industry" points out the influence of the converter on distribution and use of cotton fabrics. It is estimated that more than three billion linear yards of cotton fabrics passed through the hands of converters in 1947.

Glass Convertible Auto Tops. A cloth known as Cordoglas, woven of strong, rot-proof Fiberglas yarns and coated with a pigmented Vinylite resin to provide a range of colors, is being made available to auto shops throughout the country. Said to hold up under all climatic conditions, the convertible top may be cleaned of dirt and dust with soap and water, or of oil and grease with carbon tetrachloride.

Europe Needs Cotton. Most western European countries need more raw cotton to meet their consumption requirements, according to Francis H. Whitaker of the USDA. Raw cotton supplies are inadequate in all countries surveyed except Belgium and Switzerland. American-type cotton is particularly in demand.

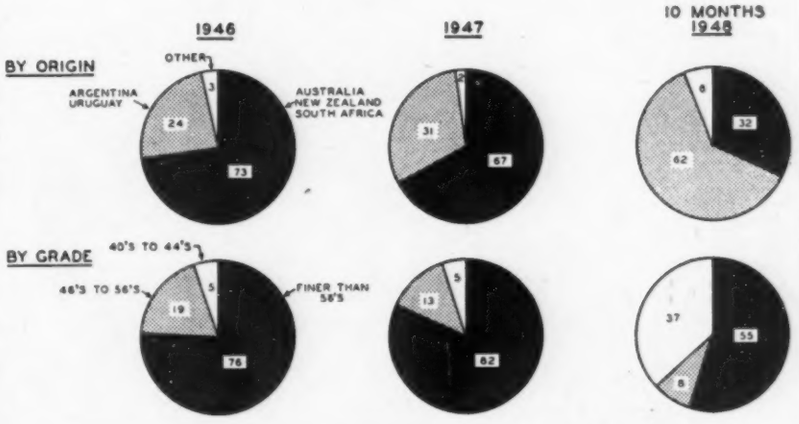
Patent Information. Common restrictions in patent licenses have been reaffirmed in recent court decisions, although there has been stricter interpretation of both patent and antitrust laws and heavier penalty for violation. Information on this subject is available from the Machinery & Allied Products Institute, 910 17th St., N. W., Washington 6, D. C.

Summer School in South America by Air. Chartered flights between Peru and this country permit American university students to study in Lima; students from Peru can fly back for study at L. S. U.

ORIGIN AND GRADE OF WOOL IMPORTS CHANGE

Two major shifts occurred in 1948 in U. S. imports of apparel wool. These were (1) a sharp reduction in the share of U. S. imports from Australia, New Zealand, and South Africa; and a corresponding rise in imports from Argentina and Uruguay; (2) a substantial rise in the proportion of coarse grades and a corresponding decline in finer grades.

The charts show the shift in origin and grades of U. S. wool imports for 1946, 1947, and ten months of 1948. Originally appearing in "The Wool Digest," the source of information was Dept. of Commerce.



What makes it Sell?

What puts the eye-appeal and sales-appeal in synthetic fabrics? Is it just the design? You know that's only half the story. Quite as important is the fabric finish—the softness, the pleasing hand, the draping qualities.

Back of every good finish there's good processing — the efficient type of processing you can count on with Olate.

Olate has a well established reputation for quick solubility, exceptional detergency, and good lubricating properties. Olate rinses from fabrics rapidly and thoroughly. Throughout the industry this pure, neutral, low titer soap is widely used because of its efficiency, economy, and gentleness.

Olate can help *your* plant turn out synthetic fabrics which have the eye-appeal so closely related to sales-appeal. Try it.

Procter & Gamble

Olate

safe and efficient for every textile soap usage!

AN

EXECUTIVE VIEWS

THE NEWS IN TEXTILES

This department is prepared by a man who is closely identified with the textile industry.

SOMETHING new on the labor relations horizon loomed up a few weeks ago when Connecticut's Governor Chester Bowles, proposed that New England industry help finance unionism in the South in order to protect itself against competition from what he called sweat shop operators. Mr. Bowles indicated that the New England people owed a vote of thanks to Mr. Emil Rieve and his group for their efforts to unionize Southern industry and proposed that Northern industry raise a $500,000 war chest to assist the unions.

It will be recalled that this is the same Mr. Bowles who not very many years ago was frantically lashing the country with dire threats of what was going to happen when the OPA bureaucracy was kicked over.

Viewing the question from every side, it seems to this writer that Mr. Bowles has stumbled into forbidden territory. Apparently, he forgot that many of the big companies own plants in both the South and New England, and if his suggestion were carried out they might find themselves in a position where their left hand was working against their right hand.

He forgot, too, that industrial relations is a "human" problem which must be solved by individuals and which cannot be solved by a "slush fund." Whether or not the operatives in an individual plant have a union should be left to the operatives in that plant. It doesn't seem to us that Mr. Bowles has much to do with it.

In the long run, manufacturers in the South and manufacturers in the North are going to find that it is necessary to have efficient management, satisfied and capable employees, and modern machinery if they are to withstand the competition. Comparing employees in similar types of mills on a job-for-job basis, it seems that whether the man is employed in the North or in the South his earnings are about the same. The northern mills might have a slight edge from the standpoint of fringe benefits, but southern mills claim that, if such an advantage exists, it is offset by savings accruing to the employee through the rental of company-owned houses.

Viewing the Connecticut governor's statement from a point approximately half way between the two regions, it seems that the only thing the controversy has proved is that the former OPA boss has not improved the clarity of his thinking.

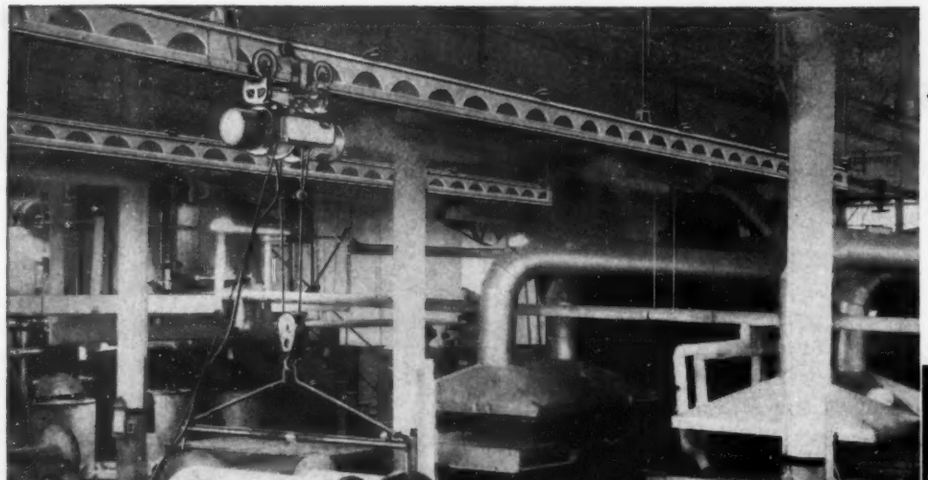
97-cent Minimum for Cotton Goods?

On the Washington scene, the question of competition between the North and the South also came into prominence when Seabury Stanton, president of Hathaway Manufacturing Company, New Bedford, Massachusetts, proposed a minimum wage rate for cotton textiles of 97 cents an hour or, as

SUGGESTION SYSTEM PAYS OFF TO EMPLOYEES AND COMPANY

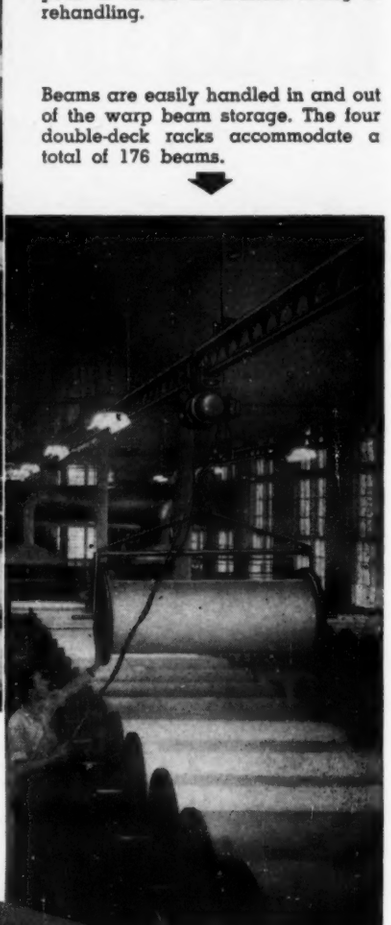
A working suggestion system for employees pays dividends to the company and cash to those making the suggestion. A total of $800 went to four of U. S. Rubber Company's Asbeston Plant employees for suggesting and installing a new method of feeding stock to the finisher carding machines. The men developed an idea for handling the asbestos and cotton fibers which will result in a better and more even product, and which will also save the company money on repair parts.

Left to right, D. T. Austin, Jr., superintendent of the Asbeston Plant; D. R. Walls, Evan Burson, Alfred Shierling, and Preston Hornsby, card grinders who made suggestion and carried through on installation; H. Gordon Smith, vice-president of U. S. Rubber; and A. C. Link, manager of the company's mills at Hogansville, Ga., location of the Asbeston Plant.



The Tramrail system permits handling beams from warp beam storage to slasher and thence to loom beam storage, entirely by the overhead route. Travel from point to point is direct; no manual lifting or rehandling.

Beams are easily handled in and out of the warp beam storage. The four double-deck racks accommodate a total of 176 beams.



BEAM HANDLING SYSTEM PROVIDES SAFETY and CONVENIENCE

A simple hand-propelled Cleveland Tramrail System handles all beams in and out of the warp beam storage and into the slashers at the Drayton Mills, Spartanburg, S. C.

A 1000 lb. carrier travels on a transfer bridge and on four tracks over the beam storage racks. The bridge may be interlocked with any of the tracks, enabling overhead delivery of any beam to any slasher.

Loom beams are taken directly from the slashers to a large storage section by a manually operated Tramrail carrier which can be run onto either of two interlocking transfer bridges there.

The Tramrail system makes beam handling easy and enables orderliness and greater efficiency.

GET THIS BOOK!

BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
2869 EAST 287th STREET • WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

he put it, "a figure near that sum." This brought about one or two quick and hot retorts from south of the Potomac River, and it was quite apparent that not many manufacturers would favor Mr. Stanton's proposal.

The current minimum as this is written is 40 cents an hour, and a bill is now before Congress which would raise this considerably. At the present time, it appears that a compromise may be reached at a figure somewhere around 60 cents an hour. Thus, Mr. Stanton's outspoken request for a 97-cent minimum came as a blow to many who had been working vigorously for a much more moderate figure.

Generally speaking, the industry has opposed minimum wage legislation on principle, feeling apparently that if Congress could set a 40-cent minimum there was no reason why it might not later set a $2.00 minimum. Many manufacturers have realized also that it is very easy to raise wages but it is always very difficult to lower them. They have felt that a floor under wages would make it necessary to close down their plants entirely when a point of diminishing returns was reached.

Still another argument which has been advanced against higher minimum wage rates is reflected in the thoughts that wages constitute a considerable portion of the price of cotton goods. If these wage rates are kept abnormally high, then it follows as the night the day that the prices of cotton goods are going to be kept abnormally high; and, in the long run, that will mean that cotton has priced itself out of the market.

Some people claim that one of the things wrong with the cotton industry is the fact that until recent months cotton apparel in the *retail* stores has been priced too high for the average pocketbook, and thus sales became abnormally low.

At any rate, Mr. Stanton has made an unusual proposal.

Brandis Study

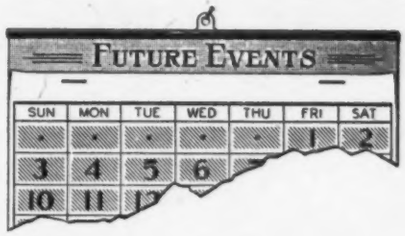
An interesting little pamphlet came to our attention several weeks ago; and, although it bears thesestional tital of *Is the South Expendable?*, the story it tells is just as applicable to the entire nation. Written by Dr. Buford Brandis of Emory University for members of the American Cotton Manufacturers Association, the study explores the fallacies of the nation's tariff policy and shows what effect "free trade" will have on the textile industry, and, in particular, the cotton goods industry.

In discussing the threat of competition from Germany and Japan and the partial rehabilitation of the textile industry in those nations, Dr. Brandis states: "Because there was a world-wide shortage of textiles, because both Germany and Japan had established textile industries, and because cotton cloth would not explode, the cotton textile industry was a key factor in the rehabilitation plans for both countries."

Dr. Brandis estimates that in the southern part of the nation something like two million people will be displaced from agriculture over the next fifteen years, and that if a portion of the textile industry is to be displaced by foreign competition it is going ot be impossible to find jobs for all of these because the industries necessary to absorb these people are nowhere in view. He points out that if there is to be any sort of world-wide allocation of resources, then certainly it should be considered that "the textile industry is more nearly a *natural* industry for the South than it is for Japan or Britain or Germany. The South grows cotton; Japan and Britain and Germany grow none, hence must pay for raw cotton out of scarce foreign exchange reserves."

Although many people may not agree with what Dr. Brandis has to say, this writer believes that they will come away from his pamphlet with the thought that at least he has presented an interesting and potent argument in opposition to the foreign trade policy of our government. His pamphlet is written so that you and I can understand it, and this is quite a relief from some of the more pedantic literature which deals with the tariff question.

If you have not already read *Is the South Expendable?*, you will find it a most interesting study.



May 12-14—Annual outing, Carolina Yarn Association, Carolina Inn, Pinehurst, N. C.

May 19-21—Annual meeting, Cotton Manufacturers Association of South Carolina, Grove Park Inn, Asheville, N. C.

May 26-28—Annual convention, Tufted Textile Manufacturers Association, Atlanta Biltmore Hotel, Atlanta, Ga.

May 30-31-June 1—Sixth annual Spinner Breeder Conference, Charlotte, N. C.

June 3—Annual outing, Alumni Association of Philadelphia Textile Institute, Manufacturers Country Club, Oreland, Pa.

June 6-10—Textile Wet Processing Equipment and Supplies Exposition, 71st Regiment Armory, 34th St. and Park Ave., New York, N. Y. (Note: dates for this exposition were previously announced as March 21-25.)

June 16-18—Annual convention, Southern Textile Association, Mayview Manor, Blowing Rock, N. C.

July 28-30—Cotton Research Congress, Dallas, Texas.

Oct. 12-22—"Textile Recorder" Machinery, Accessories, Yarns and Fabrics Exhibition, Belle Vue, Manchester, England.

October 13-16 — National convention, American Association of Textile Chemists and Colorists, Chalfonte-Haddon Hall, Atlantic City, N. J.

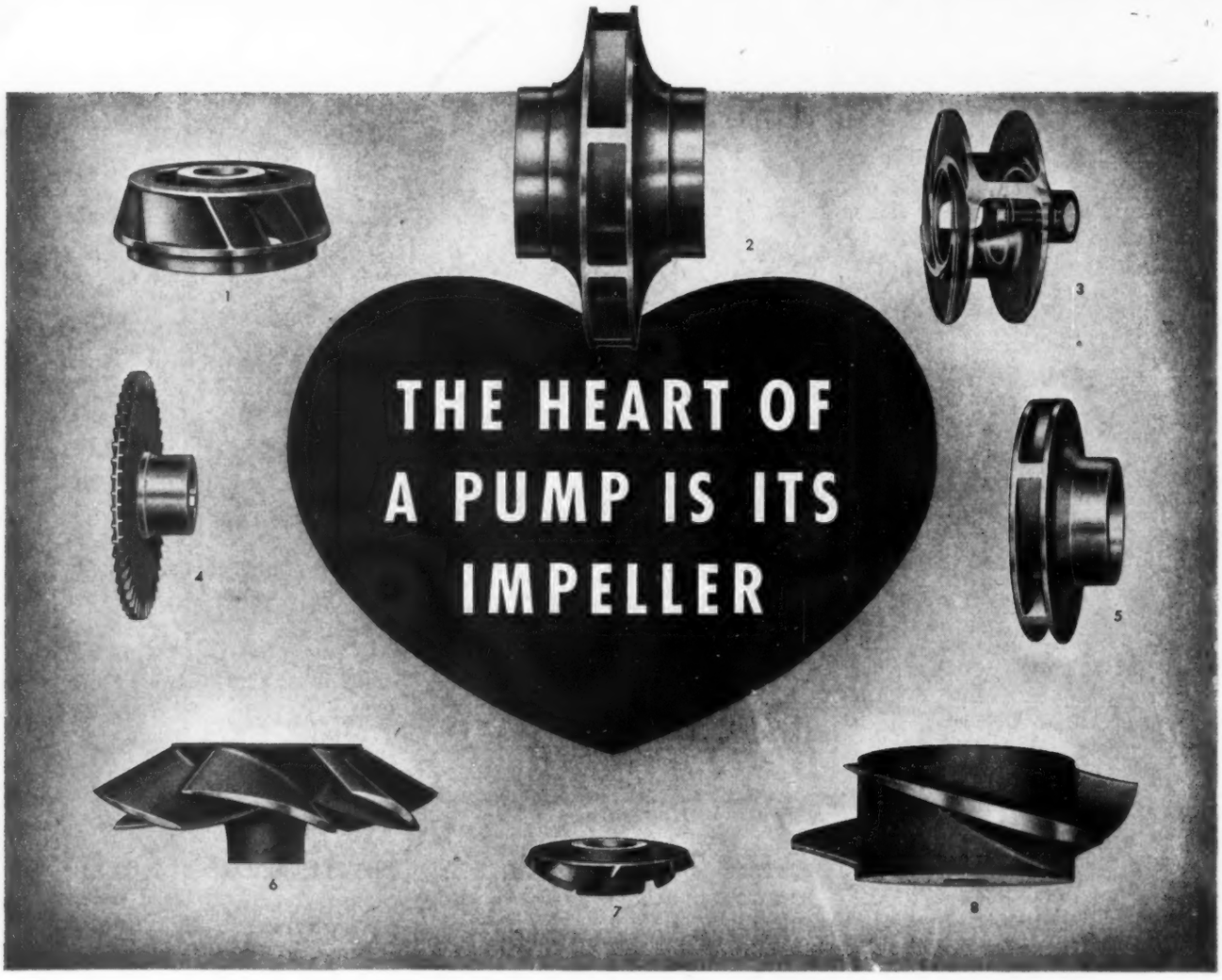
Nov. 3—Annual meeting, Cotton-Textile Institute, New York, N. Y.

1950

May 8-12—American Textile Machinery Exhibition, sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J.

Oct. 2-7—16th Southern Textile Exposition, Textile Hall, Greenville, S. C.

Oct. 27-28—Annual meeting, Carded Yarn Association, Sheraton Bon Air Hotel, Augusta, Ga.



Peerless Pumps utilize many different impeller designs to meet various fluid conditions

What makes a pump "tick?" Its heart is an impeller!

Pictured above are eight Peerless impeller designs for varying fluid conditions. No. 1 forces water upward from deep wells. No. 2 is a double suction design for high capacity horizontal pumps. No. 3 pumps solids in suspension. No. 4 handles all liquids in small capacities, at high heads. No. 5 is of single suction design for process services. No. 6 combines both radial and axial flow. No. 7 is a semi-open impeller for small diameter deep wells. No. 8 is an impeller that "propels" large liquid volumes.

The point is—capacities, lifts, heads, temperatures, chemical analysis, clarity, shaft speeds are seldom common to different pump services and installations. Because fluid conditions vary, Peerless pump designers are versatile and Peerless pumps utilize this versatility in different impellers for varying fluid conditions, successfully pumping most liquids in all industries.

Peerless horizontal pumps are available for general purpose pumping, for handling sewage and other materials in suspension, for most all process services, for moving chemicals and oils, for acids and caustics and for such specialized applications as l-p gases.

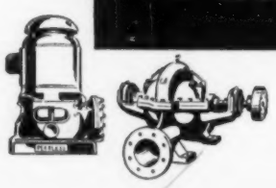
Peerless vertical turbine pumps are available for lifting water from deep wells or close-coupled for wet or dry pit installation and for drainage, drydock, canal diversion and flood control services.

Plan with Peerless for all your needs for pumps. Individual descriptive Bulletins on each of the types of Peerless Pumps described above are available upon request.

Peerless
VERTICAL AND HORIZONTAL
Pumps

fmc
PEERLESS PUMP

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
Los Angeles 31, California — Indianapolis, Indiana
District Offices: New York 5, 37 Wall Street; Chicago 40, 4554 N. Broadway; *Atlanta Office:* Rutland Building, Decatur, Georgia; Omaha, Nebraska, 4330 Leavenworth Street; Dallas 1, Texas; Fresno, California; Los Angeles 31, California



How Stain is Wrought?

During an informal luncheon of engineers, the discussion was only semi-technical, but it appeared to be over the head of one fellow present, who was anxious to demonstrate his technical knowledge.

"Since you're talking technical subjects, I'll ask one," he ventured. "How thick is the 'stainless' in stainless steel."

Silence! Then another engineer:

"About the same thickness as the 'wrought' in wrought iron."

◆

Origin of "ACA" Ticking

". . . in the trade woven twill ticking is known as ACA ticking. No one seems to know where the 'ACA' came from and what it means . . . if you can tell me . . ."

ROBERT S. BROOKS

lanta, Ga.

(We found no published definition, ut here's the dope we got on it. 'ACA are the initials of the Amoskehue Corporation of America. The company originated in European countries and migrated to the U. S. in the 19th century. Ticking made by this company was called 'ACA.' The corporation was dissolved in 1932, thereby giving American manufacturers the right to use 'ACA' in their lines of ticking which were similar to those produced by the original corporation." Sounds logical. Anyone have a better answer?)

◆

Sweet Osculation

A release from Monsanto Chemical starts off with "How sweet is a kiss?" Sure we read on—that's getting the editor's attention and is what the copy man gets paid for—and found that if the lady is wearing lipstick, the chances are that the kiss is just as sweet as sugar; powdered saccharin in the lipstick does the trick.

If carried a step further for textiles and put into table napkins—might replace desserts.

◆

In a Hurry

WUE24 INTL
CD BAIRES VIA WUCABLES
NLT COTTON W R C SMITH PUB CO WUXXD
PLEASE SEND AIR MAIL LIST OF COTTON MAGAZINES WITH ARTICLES DEALING ON CREASE PROOF PROCESSING OF RAYON GOODS.

MICHAEL A DOURA
CORRECTION MICHEL INSTEAD OF MICHAEL

(From the Argentine, and info on way.)

Back Pats

". . . received your special Modern Production (Feb. '49) issue this morning, and wish to take this opportunity to compliment you and your able, competent staff on an unusually fine job . . . this issue routed to over ten executives . . . sure they will find it as fascinating as I did. Congratulations on a real journalistic achievement."

ARTHUR R. KLOOS
Advertising Manager
Lincoln Engineering Co.

"Let me congratulate you on the Modern Production issue which has just come to my desk. The entire issue is one well worth keeping, and I know it will stay on a great many desks the better part of the year."

H. I. GREEN
Vice-President
Fidelity Machine Co., Inc.

A Broad Question

". . . introduce myself as an Indian textile man. Could not get a clear picture as to how things are done in this country. Where can I find this information?"

Name Withheld

(We've been publishing "how things are done" in textiles for nearly 51 years; hope to do so for as long again. We might have missed a few—not many, that is, but a few. Suggest questions be a little less general.)

◆

Practical Psychology

"Please send me a copy of Old-Timer's list of recommended books on practical psychology."

W. R. CAMP
Schoolfield, Va.

(Available to anyone upon request.)

◆

Cord Check for Looms

". . . January issue an article about a cord check for Draper looms by Contributor No. 8112. We are interested in more about this cord check."

JAMES R. JONES
Overseer Weaving
Washington Mills
Fries, Va.

(Now in hands of patent attorneys in Washington. For sample of device write Waterhouse, Spencer & Carroll, Journal Building, Biddeford, Me.)

Can You Help Complete Volumes?

Since 1933 "Cotton" and now TEXTILE INDUSTRIES have published an annual Cross-Index of major articles and discussions appearing in the magazine. In recent years this Index has appeared with and as a supplement to the December issue.

Many of our readers not only retain the magazine for future reference (most of the articles are good years hence), but they bind them into annual volumes.

In our travels around the country we've seen some pretty complete sets of "Cotton" and TEXTILE INDUSTRIES. However, one of our friends who wishes to complete his sets way back, is missing some issues, and would be grateful to some of you old-timers if you can let him have the following numbers to complete his set:

November 1923
December 1923
February 1924
November 1925

This will be a real service to this reader, and who knows, in time to come he may be able to render you a service in return.

While we're on the subject of filing the copies for future reference, we invite your attention to another system of retaining the information appearing in the magazine. Some readers clip the articles and file them in loose leaf notebooks under such subjects as carding, spinning, weaving, industrial relations, etc.

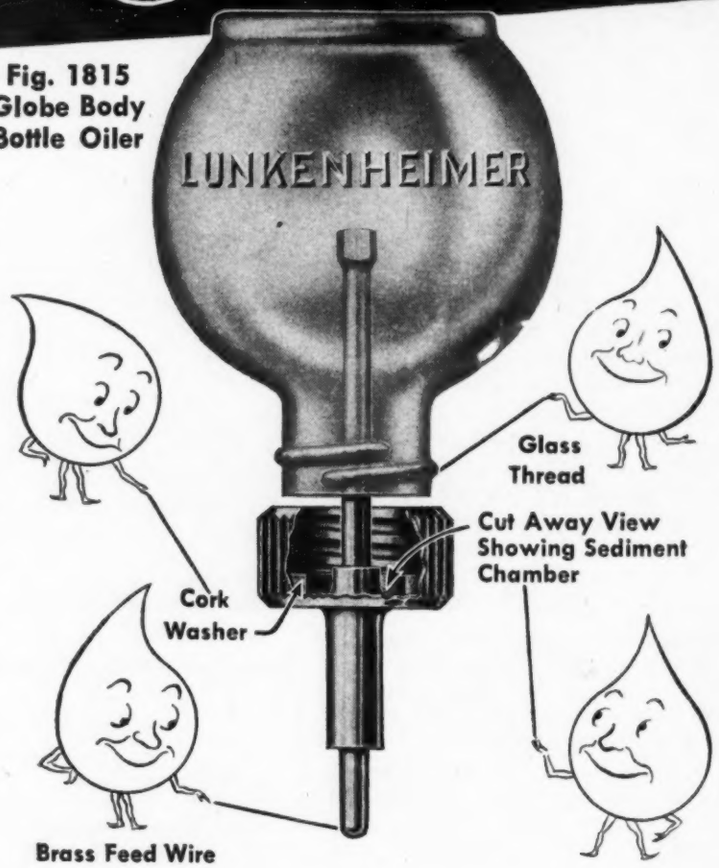
If you have a unique method of retaining your copies, or special articles, the editors will be interested in knowing it.

BETTER LUBRICATION

of Looms, Cards and other Textile Equipment

LUNKENHEIMER Visible OILERS

Fig. 1815
Globe Body
Bottle Oiler



MANY leading textile plant engineers agree that for dependable, economical lubrication of plant equipment, LUNKENHEIMER Bottle Oilers give improved service. Feeding oil only when required and without dripping or splashing, these oilers assure proper lubrication even on hard-to-reach, commonly-neglected bearings. Mills equipped with LUNKENHEIMER Oilers report six important advantages: *Oil, time* and *labor* are saved; *breakdowns* are minimized; *bearings* are protected; and *spoilage,* due to excessive oiling, is eliminated.

Investigate the profit possibilities of equipping your plant with LUNKENHEIMER Bottle Oilers. We'll gladly tell you where you may see these modern lubrication devices in service. Write for Circular No. 560.

LUNKENHEIMER DISTRIBUTORS

are well qualified to help you with your lubrication problems and can supply these and other Lunkenheimer lubricating devices to meet your individual requirements.

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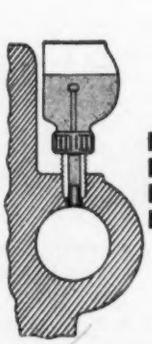
ALVOR CONSTANT LEVEL OIL CONTROL

Automatically maintains a constant oil level in reservoir of ring oiled bearings. Operates on liquid seal principle. Feeds only when oil level in bearing is low enough to break the liquid seal at end of shank, permitting air to enter the bottle. Provides visible oil supply.

No. 2 Fig 1816 Flat Side Shallow Body Oiler



No. 3 Fig. 1816 Flat Side Body Oiler

Progressive Mills Profit by Use of

Modern Lubrication Methods

IT IS HIGHLY unlikely that even the most modern textile mills will, in the near future, do away with the hand oil can, but "can the can" is becoming a sensible thought for those mills making an honest effort to cut down on lubricating and maintenance cost. There are many new or improved lubricating devices and systems designed to remove the possibilisibility of human error.

These systems do not forget, they never miss a bearing, and they are clean and positive. They result in lower lubricating cost and less bearing wear. In this way they pay for their frequently high first cost.

It is well known to every textile man that a piece of new equipment that works beautifully in one mill will not work at all in another mill in the same town, working on the same counts, and with the same type of machinery. It does not make sense, but it is true. However, the experience of other mills is the only guide when equipment has not been tested at home, and it does give an idea of what may be expected.

Modern lubricating devices for textile machinery may be divided into two groups: the individual oiling gadgets, one of which oils a single bearing; and the multiple outlet or "centralized" systems, so arranged that one injection of grease or oil at a master fitting will lubricate a large number of bearings. These are sold under such trade names as "Centralized Lubrication," "Centro-matiC," and "One-Shot."

Bale Breakers and Pickers. The Piedmont Mop Co., Charlotte, N. C., installed an Alemite centralized lubricating system on a bale breaker and a picker about two years ago. This bale breaker feeds a 41-inch Buckley beater, while the picker is of the single process type, has two beater sections, and is equipped with a blending reserve feeder. The mill runs flat strippings.

Staff Prepared

On each machine the oiling system consists of a centrally located inlet block for attaching the grease gun, which is electrically powered. From this block copper tubes deliver a measured amount of grease to each "lubrometer" fitting, these being located on the bearings that require lubrication.

TRENDS IN LUBRICATION METHODS

This list does not imply that the method indicated is the only method that might be used on the particular machine. Bottle oilers, thermal oilers, and centralized systems are each applicable to almost any type of equipment. The list is indicative of trends in lubrication methods as seen in mills today.

Bale Breakers and Pickers	**Centralized Systems**
Cards	**Bottle Oilers** **Thermal Oilers** **Centralized Systems**
Combers	**Centralized Systems**
Front Rolls	**Wick Type Front Roll Oilers**
Roving, Spinning, and Twisting Frames	**Centralized Systems**
Twister Rings	**Controlled Ring Lubricators**
Looms	**Bottle Oilers** **Thermal Oilers** **Centralized Systems**
Slashers	**Centralized Systems**
Winders	**Centralized Systems**
Knitting Machines	**Centralized Systems**
Sewing Machines	**Centralized Systems**

There are 39 lubrication points on the bale breaker and 80 points on the picker.

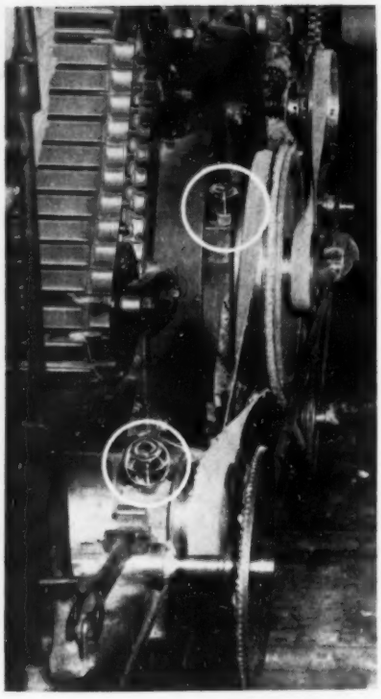
Once every twelve hours the grease gun is fitted to the nipple at the central inlet block, and pressure is applied. The machine is not stopped, and lubrication is completed in less than a minute with no loss of production time. Before the installation of this "Centralized" system, the bale breaker and picker were equipped with individual Alemite fittings. A grease gun was applied to every fitting every shift, and it took forty minutes to complete the job. The machines had to be stopped while the job was being done.

The only disadvantage that has been noted with the system is the necessity for removing a section of copper tubing any time that a gear guard or a pulley is taken from the machines for a repair job. Such occasions, however, are not frequent, and this one disadvantage has been many times overbalanced by a considerable reduction in lubricating cost and the operation of the bale breaker and picker for two years without a single bearing failure and very little bearing wear.

It has also been noted that before the installation of the system, there were many occasions when the oiler got grease on the lap when trying to get to one of the more inaccessible fittings. This danger has been eliminated. Fittings are never filled too full on the new system, and there is no danger of dirt, dust, or sand getting into the bearings with the grease.

Cards and Combers. A comparatively recent and generally accepted modern method of lubricating cards is by the use of thermal or bottle oilers, such as manufactured by Lunkenheimer and shown in the accompanying illustration. These simple devices are oil bottles fitted with special feeding spouts which operate on a change of temperature (thermal oilers) or on the slight vibratory movement of a revolving shaft (bottle oilers). The thermal oilers force a few drops of oil onto a bearing whenever the bearing heats slightly.

Bottle oilers feed regularly as

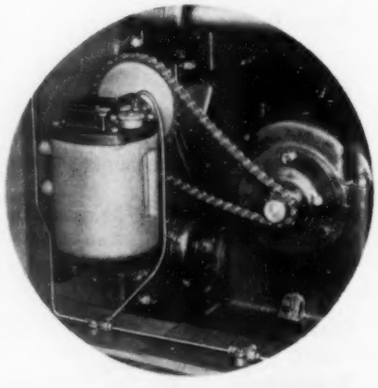


The Lunkenheimer Co.

The cylinder and licker-in bearings of this cotton card are equipped with bottle oilers which feed oil regularly when the shafts rotate.

long as the shaft on which they are mounted vibrates slightly in rotating. These oilers are inexpensive and do a good job on the bearings on which they can be mounted. They cost about a dollar per installation, and one is required for each bearing to be lubricated. They have been used with success on all cylinder and doffer bearings of cards and on comb boxes.

Central lubrication systems have been successfully adapted to combers. Whitin combers have been



Bijur Lubricating Corp.

Cyclic lubricator located within the head end of a Whitin wool spinning frame. It delivers a measured quantity of oil at predetermined intervals to 54 bearings.

equipped with Bijur central lubrication systems which feed a controlled amount of oil to each of 71 individual friction points. Previous methods of hand lubrication involved the routine oiling of each of the bearings scattered all over the comber. The Bijur system lubricates while the machine is running, avoids the possibility of lubricant being spilled on the combed fiber, and eliminates "forgotten" bearings.

Front Roll Oilers. A short while before the war, Precision Gear and Machine Company, Charlotte, N. C., patented an oiling device for the front rolls of frames. A few of these were installed in mills for testing, but the shortage of materials during the war years temporarily stopped manufacture. These devices are now on the market again, and several years of mill tests prove them to be of real value in the lubrication of front rolls.

This oiler consists of a small bronze cylinder that is fitted into a threaded hole tapped through the roll bearing on its under side. This cylinder contains a wick which extends up through the bearing to the roll neck and carries oil from the cylinder to the neck by capillary attraction. There is a small opening with a movable cover on the top of the oil cylinder through which the oil supply is replenished every ten days or so.

Mill men who have used these oilers agree that they prevent the oil from running out of the bearings and getting on the yarn. Neck wear is reduced, the amount of lubricant used is cut down, and there is some reduction in power required to run the frames.

The Precision Front Roll Oiler has been used for several years in the Carlton Yarn Mills, Inc., Cherryville, N. C., with excellent results. They are now installed on all of their new spinning frames before putting them into operation. Cannon, Avondale, Burlington, and American Thread are also using these oilers on some of their frames.

Roving, Spinning, and Twisting. On roving and spinning frames, it is not only necessary to lubricate the rolls, but some sure method

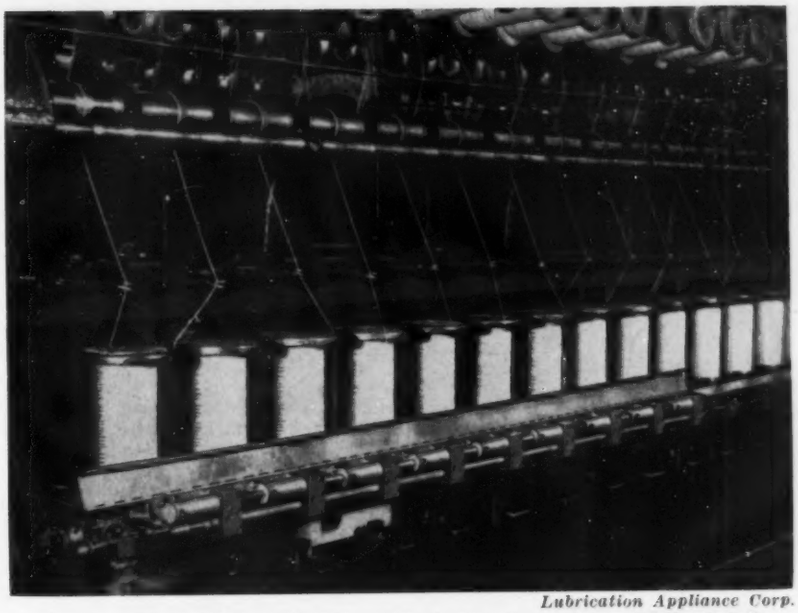
must be used to assure lubrication of the head gearing. A centralized system seems most suited to this application, and a number of mills are profiting from its use. Here, again, the gearing and bearings may be lubricated from one central pressure pump without stopping the frames and without exposing the head end to the dusty and linty atmosphere of the room.

The Bijur "One-Shot" lubricator for use on spinning frames has a capacity of one pint of oil, and it develops an average pressure of 30 psi per shot. The discharge per shot is adjustable but it is set for 8 cc of oil for spinning frames, and the same setting is used for twisters. Many new frames are equipped with these "One-Shot" lubricators before leaving the factory.

Since roving, spinning, and twisting frame heads are lubricated only once a day, or once a shift at most, there is little reason for using a completely automatic system. However, automatically timed lubricators are available which will apply a shot of oil at the end of any desired time interval. These need no attention other than the periodic refilling of the oil reservoir with the proper grade of lubricant. Completely automatic systems using grease instead of oil may also be had.

Twister Rings. A device has recently been announced which will automatically lubricate twister rings. The old method of taking a little grease and applying it to the rings with the fingers has always been unsatisfactory. Not only must the frame be stopped, but it is hard to get enough grease on the rings without having some of it get on the thread being twisted or having some of it drip onto the floor beneath the frame.

The new device, manufactured by Lubrication Appliance Corporation, Davidson, N. C., consists of a piston type of mechanism which fits below the ring rail of the twister frame. Each ring has a small piston and cylinder, all of these being connected by a rod arrangement with a ratchet at the end, so that every time the rail descends, a small amount of grease is ejected from each cylinder onto its ring.



Lubrication Appliance Corp.

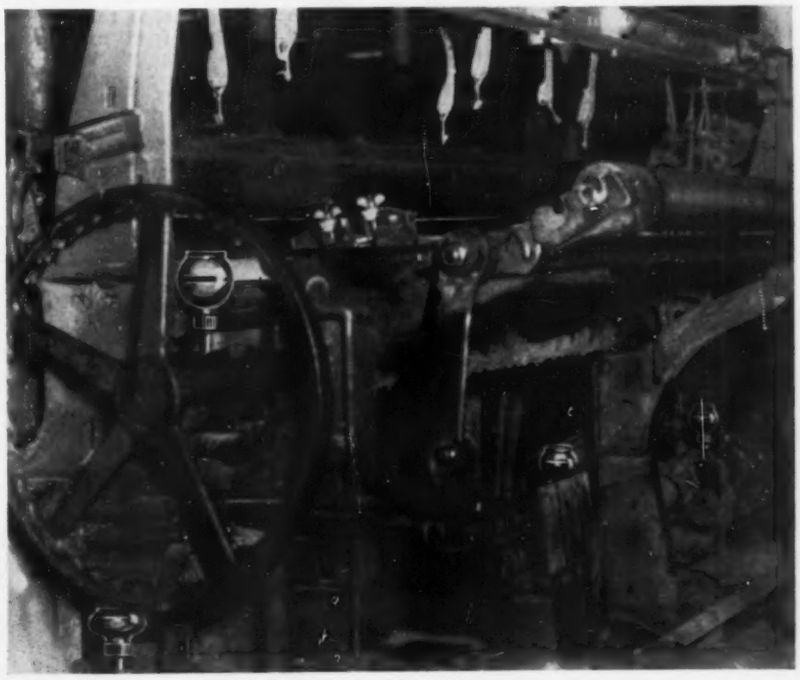
Close-up of twister equipped with device for automatically lubricating rings. Note that each ring is fitted with a small cylinder and piston connected by a rod arrangement with a ratchet at the end. Each time the rail descends, a small amount of grease is ejected from each cylinder onto its ring.

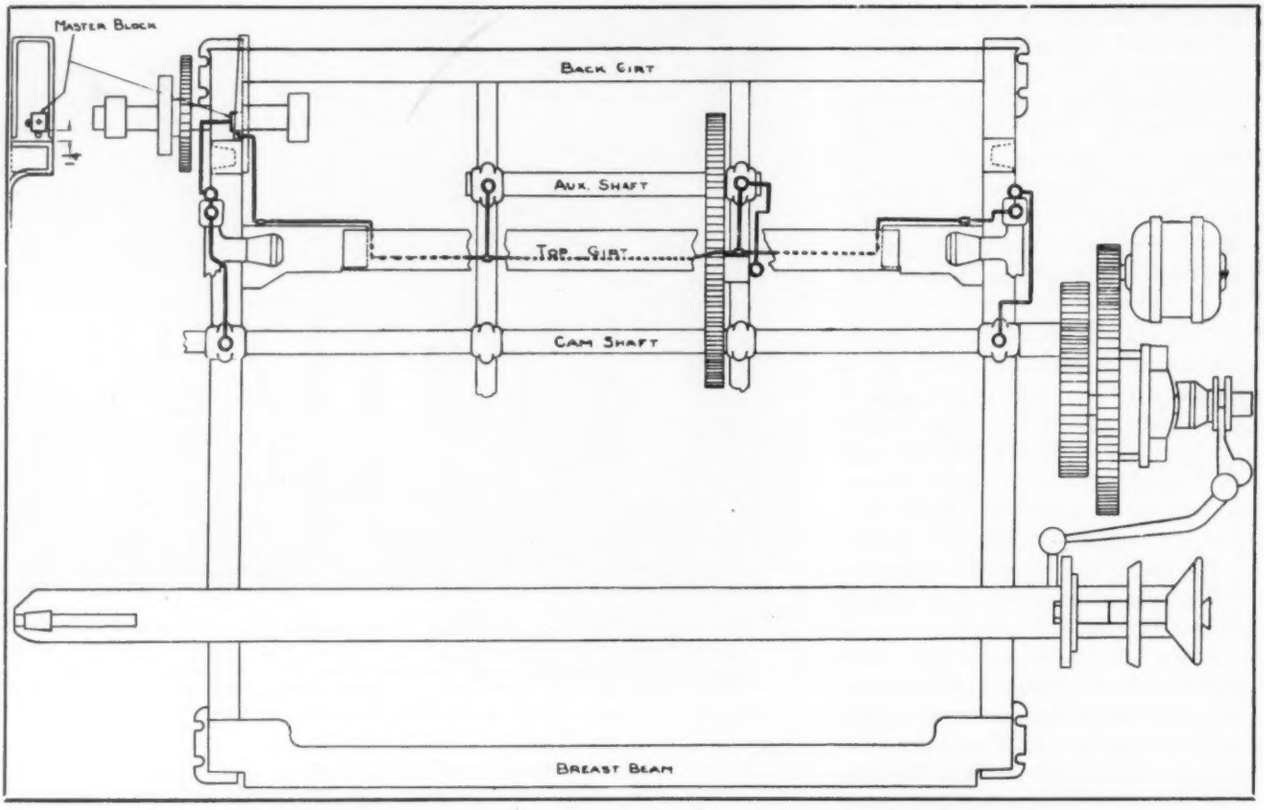
Applying such a small amount of grease to the rings at such frequent intervals avoids any possibility of grease getting onto the thread or being wasted by dropping onto the floor. Also, the frames need not be stopped even to refill the cylinders with grease. Refilling is required only once every two or three weeks with frames operated at normal speeds. The device is equipped with an automatic cutoff which protects the frames in the event that the grease supply should become low without the operator's noticing.

The manufacturer claims that from 50% to 80% less lubricant

Bottle oilers may be applied to the more accessible bearings of looms. Crankshaft and camshaft bearings of this loom are so equipped.

The Lunkenheimer Co.





Alemite centralized lubrication system as applied to nine bearings on a Draper Model X-2 loom.

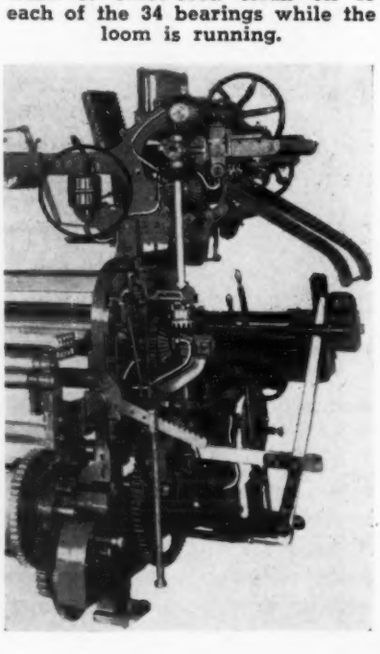
is used on rings on which the lubricator has been installed. It is now being used at Martha Mills, Thomaston, Ga., Aldora Mills, Barnesville, Ga., and Goodyear Clearwater Mills, Cedartown, Ga.

Alemite also manufactures an automatic lubricating device for twister rings. This design is said to have the additional advantage of having one central lubricant tank so that it may be refilled without the necessity of filling a separate chamber for each ring.

Looms. No single lubricating system has been accepted as the most desirable for the lubrication of looms. Many mill men swear by bottle oilers, while others insist that the centralized systems are the best. Both have been found satisfactory, and there are advantages to each. The bottle oiler is less costly, but does not do nearly so complete a job since bottles cannot be applied to all bearings. Bottle oilers are only used on the more accessible bearings, and they must be used in conjunction with grease fittings, and some other spots must be hand oiled from an oil can.

A centralized system can be arranged to go only to a part or to all of the friction points on a loom. One shot of a grease gun, or one movement of the lever of an oil pump will then completely lubricate every bearing to which a lubricant fitting has been attached. The standard Alemite Lubrometer System for the Draper X-2 Loom lubricates 21 bearings and two cams, while the loom is in motion. A flexible rubber hose is used for the lubricant line leading to the lay sword for the lubrication of the two protector rod bearings. This system uses a grease as the lubricant.

High-speed bearings of this Crompton & Knowles W-3 woolen and worsted loom are kept well oiled by the Bijur one-shot lubricator (in circle). Every four hours, the operator pushes the lever forward to force-feed clean oil to each of the 34 bearings while the loom is running.



The Bijur "One-Shot" loom lubrication system feeds a measured amount of oil to loom bearings. It reaches as few as 34 points on worsted and woolen looms and as many as 100 points on large carpet looms. Crompton & Knowles will build these lubricating systems into any of three different types of their worsted and woolen and carpet looms if the purchaser so desires.

Considerable time was devoted to a discussion of the various advantages and disadvantages fo bottle oilers as opposed to centralized lubrication at a recent meeting of the Textile Operating Executives of Georgia. This discussion was reported in the Jan., 1949, issue of

TEXTILE INDUSTRIES. No definite decision was reached as to which system is better or more economical in the long run.

Slashers. Jackson Mills, Wellford, S. C., installed, some time ago, a centralized system of lubrication for their slashers. This Lincoln "Centro-matiC" system lubricates all of the bearings of the slasher except the main bearings of the cylinder, which take a heavier, high temperature grease applied with a grease gun. This system has been most satisfactory and has brought about savings in lubricant, slasher tender's time, and power consumption. The management is thoroughly sold on the advantages of centralized lubrication.

Other Applications. Generally speaking, bottle oilers or centralized systems can be fitted to any piece of machinery that requires lubrication. The number and type of bearings and their location determines the more preferable system. For a few bearings, the bottle oiler is much less expensive, but where there are a large number of bearings or other friction points, the centralized system may be best. Also, greased bearings may be lubricated by a centralized system, while a semi-solid lubricant cannot be used in a bottle oiler.

Winders, knitting machines, and sewing machines are among the other pieces of textile equipment to which centralized systems can be attached or on which they are built-in by the manufacturer. The lockstitch machine, manufactured by Willcox and Gibbs, includes a Bijur system of automatic lubrication which oils the machine at every 60,000 revolutions of the main shaft. It is only necessary for the operator to refill the reservoir when the oil gets low.

Self-lubricating bearings of the wood and porous metal types have not been dealt with in this discussion due to the fact that this is a field within itself.

Importance of Lubrication. The importance of adequate lubrication for high speed bearings cannot be overemphasized. It must be remembered that there should not be any metal to metal contact of a journal against its bearing regardless of the journal's weight or speed. There must always be a film of lubricant in the form of a curved wedge between the stationary and the moving member, and the journal must turn on this wedge and not on the bearing metal. A forgotten bearing will heat and grind itself down as soon as the wedge of lubricant is depleted. This means a burnt out bearing and a major repair bill.

The benefits of correct lubrication may be summarized as follows:

- Less power consumed
- Maintenance and repair costs reduced
- Labor saved
- Accident hazards reduced
- Fire hazards reduced
- Production increased
- Cleanliness of operations improved

Lubrication wisely and adequately applied is inexpensive. The results of poor lubrication are costly.

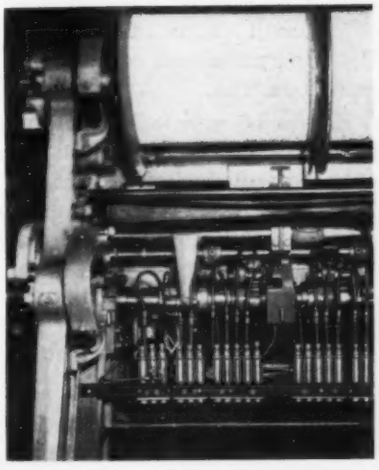
LUBRICATION BULLETINS AVAILABLE

T.I. No.*	Title	Bulletin No.	Company Address
LB-1	Bottle Oilers: What They Are, How, and Where to Use Them		The Lunkenheimer Co., Cincinnati 14, Ohio
LB-2	Thermal and Bottle Oilers	No. 28-C	Trico Fuse Mfg. Co., Milwaukee 12, Wis.
LB-3	Controlled Lubrication for Twister Rings		Lubrication Appliance Corp., P. O. Box 324, Davidson, N. C.
LB-4	One-Shot Lubrication of Twisting and Spinning Frames		Bijur Lubricating Corp., Long Island City, N. Y.
LB-5	Midget Lubrometer System Installed on Draper Loom	22-139-1	Alemite Division, Stewart-Warner Corp., Chicago 14, Ill.
LB-6	Centro-matiC Lubricating Systems	No. 801	Lincoln Engineering Company, 5701 Natural Bridge Ave., St. Louis 20, Mo.
LB-7	Metered Lubrication of Textile Machinery	6A	Bijur Lubricating Corp., Long Island City, N. Y.
LB-8	Farval Dualine, Jr. Centralized System of Lubrication	No. 10-B	Farval Corporation, 3255 E. 80th St., Cleveland, Ohio.

*In ordering any of these bulletins from "TEXTILE INDUSTRIES," please refer to this number and use card on page 230.

The eight Reiner tricot knitting machines at Ko-Nit Mills, Englewood, N. J., each have 103 points requiring lubrication. Installation of a centralized lubrication system on these machines has resulted in increased production, improvement in quality of product, decreased lubricant and power consumption.

Lincoln Engineering Co.



Ellison S. McKissick, ACMA's new board chairman.

HIGHLIGHTS OF 53RD ACMA MEETING

Ellison S. McKissick elected chairman of board of government.

"Research should be designed to anticipate the incessant growth of the company."—*Heard.*

"Mills will have to work together as a group; get organized as labor has done."—*Wingate.*

"Public opinion will never be static. Industry must have the truth known."—*Huggins.*

"The export business of the textile industry meant the difference between extraordinarily high business and regular business."—*Murchison.*

"We are now teetering on the brink of a socialistic economy."—*Moore.*

Research, Organization, Public Relations, and Exports Needed, ACMA Told

Staff Report

THE AMERICAN Cotton Manufacturers Association, in its 53rd annual meeting at Palm Beach, Florida, on March 31-April 2, elected Ellison S. McKissick of Alice Manufacturing Company, Easley, S. C., as its Chairman of the Board of Government. The new chairman was elevated to this position of honor from the first vice-presidency, succeeding Harvey W. Moore of Concord, N. C.

Though ample time was provided for relaxation, addresses by prominent men featured the annual meeting. Abstracts of the addresses are given as follows:

Harvey W. Moore, Chairman of Board, American Cotton Manufacturers Association (annual report). We are now teetering on the brink of a socialistic economy; e.g., government's threat to construct steel plants . . . pending legislation which would socialize the medical profession. The association has strengthened its Washington representation and is doing everything possible to keep informed of the rapidly-changing situation.

M. Earl Heard of West Point Manufacturing Company on "Need for Research." Buyers of textiles today are very critical and evidently expect standards of quality far higher. The fundamental purpose of any corporate policy is to keep that company adjusted both defensively and offensively to changing industrial conditions . . . from research.

Emphasis is being placed upon a function of research which can only be called obstetrical . . . to bring out new products and go into markets into which they have not previously competed. Corporate profits can no more be perpetuated without new or better products than family names can be perpetuated without new children.

Research is a long range operation which requires firm adherence to the methods of science and the tools of scientific study. Research is not a bug-hunting expedition. It is not subservient to production, sales, or engineering. It should be designed to anticipate the incessant growth of the company and to direct that growth under profitable and permanent activities.

Research results come from a state of mind on the part of management evidenced by (1) faith in the scientific method (2) participation with a research staff and its program (3) the statement of clear policies, and (4) the statement of corporate objectives.

The biggest single public relations problem which any research organization has is in selling itself to its own company.

H. L. Wingate, President, Georgia Farm Bureau Federation; Vice-President, National Cotton Council on "Relationship of South-

ern Agriculture and Industry." The farmers do not want acreage control, but they realize that if guarantees are to be 90%, there must be control. Under world conditions today, it is necessary to have carry-overs of farm products —and carry-overs are impossible without guarantees.

Price guarantees are a protection to not only the farmer, but to everyone.

Farmers would not object to a reasonable minimum wage if the minimum wage were tied in with the cost of living.

Mills will have to work together as a group; get organized as labor has done. Labor goes to a convention for one week or for two weeks until they get together; the mills can also organize if management makes up its mind to do the job.

G. Ellsworth Huggins, Chairman of Textile Committee on Public Relations. The textile manufacturer has been unwilling to share factual information about his activities with the public or the professor, and the public has acquired through the years impressions and estimates of [the textile industry] that are false.

Through the Textile Information Service [supported by mill subscribers] information about our industry is now flowing to millions of people through newspaper and magazine articles, and through photographs, booklets, public speeches and college lectures, personal interviews with influential persons, pictorial exhibits, etc.

To the man who is thinking he may drop out of this program, I submit that our story must be told over and over. Public opinion will never be static. Industry must have the truth known.

C. T. Murchison of The Cotton-Textile Institute, Inc., on "Exports and Monetary Situations." The export business of the textile industry meant the difference between extraordinarily high business and regular business; the loss of export business spelled the difference to both the textile industry and to the farmer. If we do not get the export business, the pressure will be greater.

The dollar shortage must be corrected in foreign countries. America must adopt a wise policy with respect to foreign investments; we don't want to spend money to finance foreign cotton mills. We should think of foreign investments in terms of public work.

The cotton farmer and cotton manufacturer should join forces to meet present problems.

In addition to the elevation of Mr. McKissick as titular head of the association, other officers elected were: George P. Swift of Muscogee Manufacturing Company, from second vice-president to first vice-president; and William H. Ruffin of Erwin Cotton Mills Company, second vice-president.

ACMA LEGISLATIVE COMMITTEE REPORT

Opposed: Action of Cuban government which required import permits from Cuban authorities before U. S. textiles could be shipped to Cuba.

Proposed increase in minimum wage.

The $1.05 minimum wage for yarn blends on the cotton system if such blends contained more than 45% wool.

Further tariff reductions on cotton textiles from foreign countries.

Investigated: Importation of German and Japanese textiles.

Importation of socks from England.

Assisted: Other textile interests to retain official testing standards instead of changing them.

On proposed legislation with reference to flammability tests.

On Taft-Hartley Act legislation.

Trade Agreements Act of 1949 (Reciprocal trade agreement).

SINGLE ASSOCIATION ADVOCATED

During the Palm Beach meeting of the ACMA, a joint committee meeting was held, composed of representatives of the American Cotton Manufacturers Association and the Cotton-Textile Institute, Inc. This joint committee voted unanimously to recommend that the two organizations be made into one, the single association to represent the cotton textile industry of the nation.

Details connected with putting the two units into one are now being worked out by committees appointed to discuss the various phases involved. The committees will report at a later joint meeting.

Chairman of committees are: For the Cotton-Textile Institute, George A. Harris of Dan River Mills, Inc.; for the American Cotton Manufacturers Association, W. D. Anderson of Bibb Manufacturing Company.

Mill Saves Labor and Increases Production with

EXCLUSIVE

New Builder Cam for Warp Frames

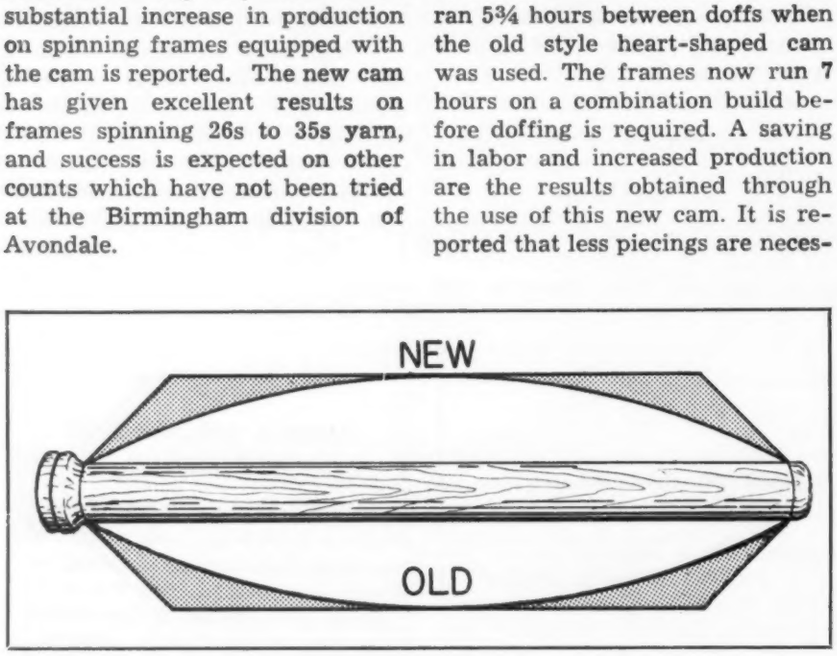
Staff Interview

A NEW CAM for warp spinning on a combination build has been designed by W. H. Conner, overseer of spinning at Avondale Mills in Birmingham, Alabama. A substantial increase in production on spinning frames equipped with the cam is reported. The new cam has given excellent results on frames spinning 26s to 35s yarn, and success is expected on other counts which have not been tried at the Birmingham division of Avondale.

The conventional cam, as shown below, allowed 3100 yards of yarn to be wound on each bobbin. The new warp builder cam permits 4200 yards of yarn to be wound on each bobbin. The frames ran 5¾ hours between doffs when the old style heart-shaped cam was used. The frames now run 7 hours on a combination build before doffing is required. A saving in labor and increased production are the results obtained through the use of this new cam. It is reported that less piecings are necessary and better work is produced in spooling and other operations.

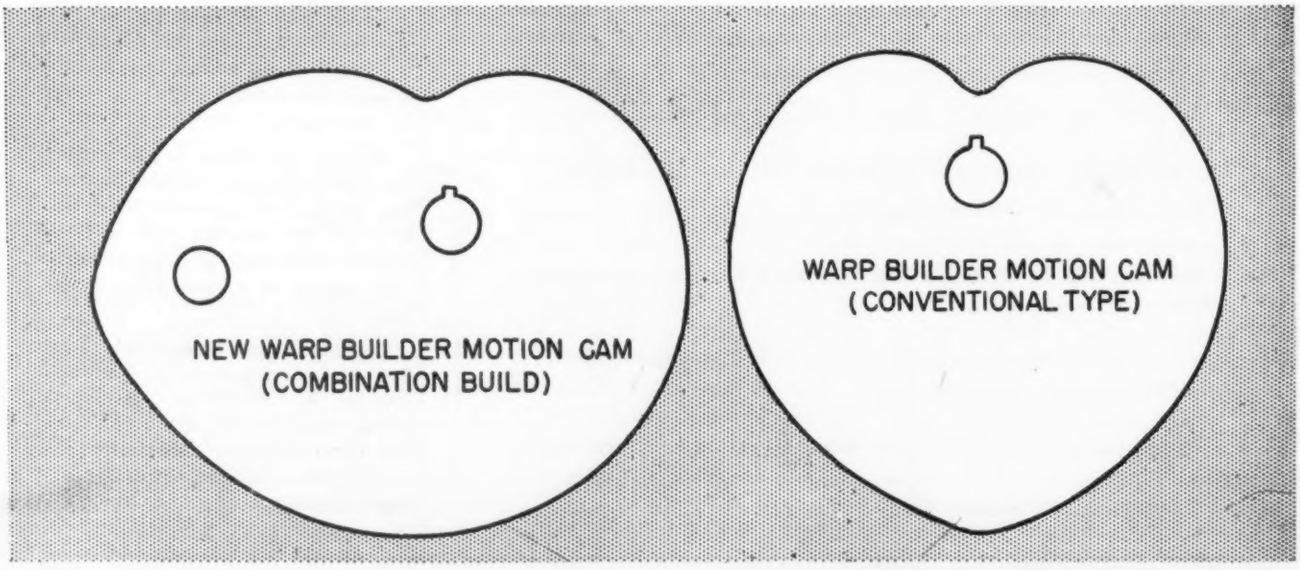
The new cam lays 3⅞ yards of yarn on the traverse going down, and 14 yards on the traverse going up. The fast motion on the downward traverse lays the yarn to bind the preceding layer which was wound at close interval.

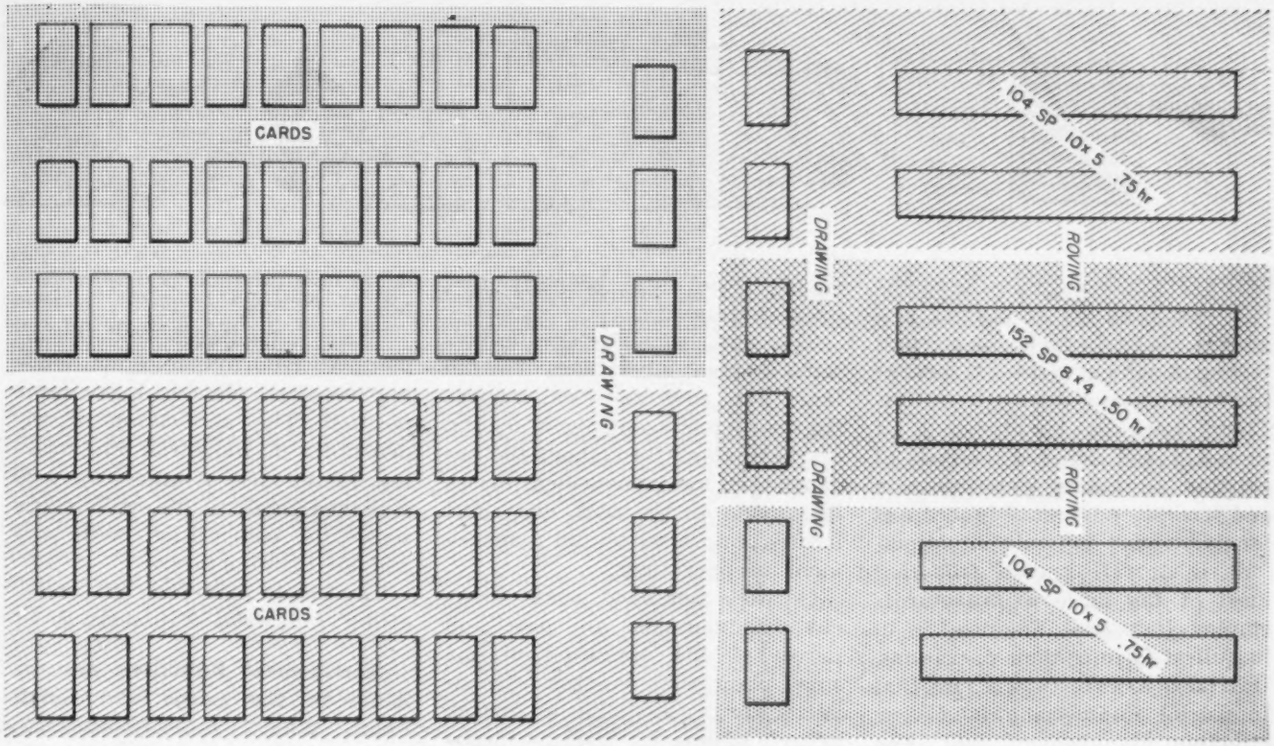
The difference between the bobbin build obtained with the old style cam and that obtained with the modified cam, is shown in the accompanying sketch. The new cam diminishes the dwell at the shoulder of the build, thus preventing the yarn from sloughing off. The additional yardage is indicated by the dotted lines in the illustration.



Left, sketch showing difference between bobbin made with conventional (old) cam and one made with new cam designed by Mr. Conner.

Below, outline of the two cams is presented for purposes of comparison. Mr. Conner's cam is shown at the left and the conventional cam at right.





This machinery layout and job load offers a typical example of Industrial Engineering in a small plant. It is the result of job load study and matching machine efficiency and operative efficiency so that both have a full day's work. Under the plan as shown, machine efficiency improved and employee earnings increased. Factors involved from the Industrial Engineer's viewpoint were time studies, job methods, work loads, incentives, and economies. Each shaded area shows one machine operator's job.

Textile Industries **Presents**

Industrial Engineering

for the Small Plant

By GEORGE E. TUCKER

Industrial Engineer
Tailladega Ala.) Cotton Factory

EXCLUSIVE

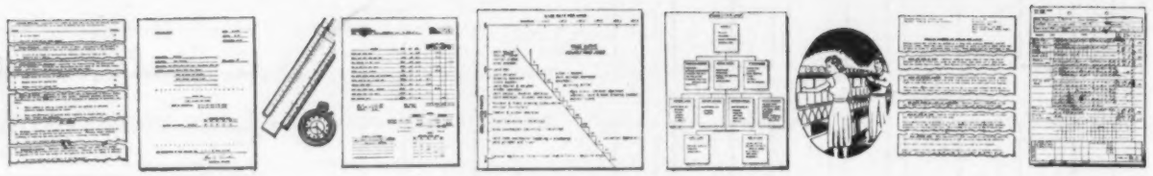
THE SMALL PLANT can and must afford Industrial Engineering. In present day competition the large and the small manufacturers compete in the same markets with identical products. The manufacturer of the best product at the least cost to the consumer and with the best service, whether the mill is large or small, will continue with a profitable enterprise.

Any manufactured product results from a proper combining of materials, machinery operations, and manpower. It is the combining of these three elements in the proper proportions and amounts that determines the profits of a manufacturing concern.

Raw materials may be bought by all manufacturers at approximately the same price. Machinery, likewise, may be secured by all at approximately the same price. Wages paid to employees are about the same throughout any particular industry. The major problem in operating a profitable manufacturing concern is readily apparent—How can the small manufacturer make use of materials, machinery, and manpower in such a way that the competition of large manufacturers may be met?

(Please turn the page)

Industrial Engineering for Small Plants



THERE IS NO magic in the methods used by Industrial Engineers. They have no mysterious formulas which make all operations simple and always lucrative. Their work is simply that of thorough and detailed analysis of existing situations, determination and recommendation of procedures for improving existing situations.

It is a well known fact that most of the large manufacturers employ Industrial Engineering in its fullest form in their operations. It is also a well known fact that Industrial Engineering is a very effective Management tool. The point should be made and emphasized, in this connection, that Industrial Engineering is not a substitute for Management, but is simply a tool to be properly used by Management.

The small manufacturer enjoys some inherent advantages over the large one, such as: local ownership and management, a feeling of "belonging" throughout the organization, top management decisions made on the spot, and short interval appraisal by top management of operations.

On the other hand, some inherent disadvantages are part and parcel to the operation of the small plant, such as: lack of specialists always available to furnish expert advice on various problems, inability to carry on large-scale and constant research and development programs, inability to maintain a large staff to develop new products and sales outlets.

These advantages and disadvantages tend to counteract, leaving the small plant in a favorable position. The application of the principles of Industrial Engineering, in the case of otherwise well managed small plants, will insure successful competition with any and all manufacturers.

The small plant can and must afford Industrial Engineering.

Management Functions are the Same in the Large and Small Plant. What is the difference between the functions and operations of the small and large plant? This question is most easily answered by examining the functions and operations of any manufacturing concern. In a general sort of way, it may be said that any organization is a combination of buildings, machines, and manpower set up to convert raw materials to usable finished products. Certainly, both small and large plants are no different in this general consideration.

The equipment, materials, and supplies must be procured by all plants. The manpower must be assembled, trained, and properly paid by all plants. The finished product must be sold at a profit by those who remain in business. The organization must be efficiently administered in both small and large plants.

The measure of success of any manufacturing concern depends entirely on the efficiency with which these various functions and operations are performed. The size of the plant in no way determines the success. Of course, there is the consideration of what percentage of the gross income may be spent on the several functions and operations that go to make up management.

The large plant may have a small advantage in both purchasing and selling. This advantage is not too important except in un-

What is Industrial Engineering?

Inasmuch as Industrial Engineering has no exact definition, and Industrial Engineers do not enjoy a professional status which is determined by recognized functions and qualifications, it is a natural question to ask: What is Industrial Engineering?

A handbook of "Descriptions of Specialized Fields," published by the Department of Labor in September 1945, states that, "The Industrial Engineer has much the same background and training as the Mechanical Engineer. His work is similar in part to that of the Chemical Engineer and in other aspects to that of the Safety Engineer. In construction and plant layout, his work is related to that done by Civil Engineers in the construction of industrial buildings and plant design."

This somewhat rather lengthy and vague description serves only to indicate that the Industrial Engineer must be versatile.

In a very narrow sense, the Industrial Engineer may be described as being a Production Engineer which limits his field to manufacturing processes such as: plant layout, process planning, procedure development, standards development and use, methods simplification, material handling, time and motion studies, incentives, waste conservation, and plant facilities.

In order that this discussion may be carried on with at least some kind of a definition of the subject, the following definition is presented to serve the purpose: Industrial Engineering is a tool of Management which provides scientific data and techniques which enable Management to perform its functions more effectively.

Industrial Engineering is not a substitute for Management. It is a tool of Management to be used in shifting the emphasis from *art* to *science* in performing the functions of Management.

Many plants, large and small, are operated today by managers who are shrewd guessers and practice more art than science. If these managers could base their decisions on factual data their future success would be guaranteed, not be just a gamble on future right guessing.

usual situations. Machinery, if kept up to date and in good operating condition, affords no particular advantage to either. Wages paid to employees are about the same for comparable jobs throughout industry.

The large plant is able to afford a greater number of specialists permanently on the management and administrative staff. Together with the increased number of people goes the increased problem of coordinating the work and insuring that each job is satisfactorily performed.

The small plant is able to afford a fewer number of people in the management and administrative jobs. These few people must be well trained and experienced in several functions, but offer a lesser problem in the matter of coordination and satisfactory performance of work. The greatest advantage that the small plant has is that of personal contact from sweeper to manager and manager to sweeper. Everyone, up and down the line, knows the other personally, which promotes a feeling of belonging to the same team.

In most small plants, the owner or largest stockholder is the manager. He can make top management decisions on the spot and in the atmosphere of the manufacturing plant, where probably the success of a manufacturing concern is determined.

Management Develops Through Self-Education. Progressive management finds and uses the best methods for its operations. As has been previously pointed out, the small plant management with a smaller number of individuals is required to perform all the functions that are required of the large plant management. In other words, each member of the management group of the small plant must handle several jobs in expert fashion. There is only one answer with regard to the caliber of the men who make up this small plant management group. Each must be top flight and good in all jobs for which he is responsible.

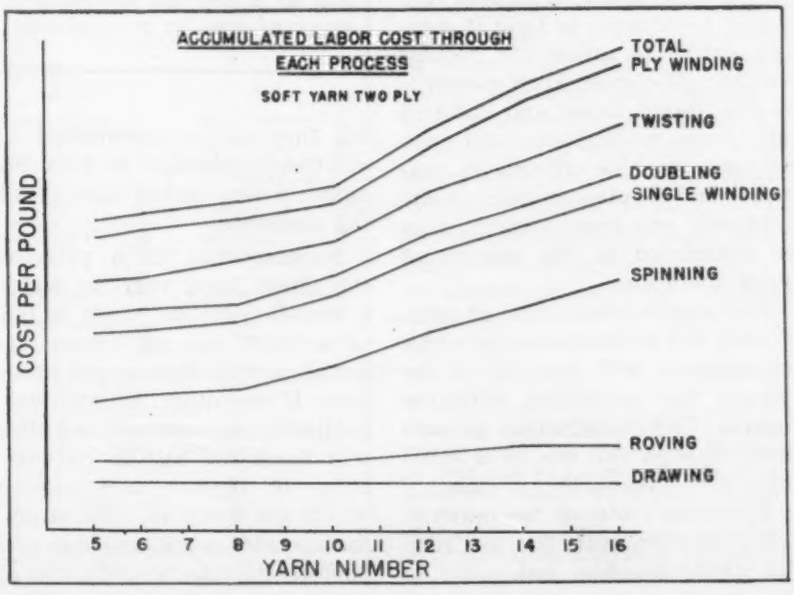
It is a rather simple matter for a plant to employ a specialist in most any field. It is somewhat more difficult to employ an individual who is a specialist in several fields and have those fields be the particular ones desired by management when only six or eight men are in its management group. The question immediately arises: what can the small plant do about setting up and maintaining progressive management?

This question cannot be answered in a few words, but it does have an answer which has been proved many times. The problem must be approached with a long ranged plan for developing men who can satisfactorily perform several specialized jobs, and have each man assigned to the jobs he can best handle. It should be emphasized that all functions must be satisfactorily performed. This is especially essential in the small plant where there can be no second and third checks on management functions.

The manager of the small plant must educate himself so that he knows what progressive management is, to be able to recognize it in his plant, and take the necessary corrective action if he does not have it in his plant. This statement seems rather elementary and practically an insult to small plant managers. However, experience has shown that by far the greatest number of industrial failures result from poor management.

Since the manager or manager owner is the individual who is responsible for all the functions of the enterprise, certainly he should know what kind of management is needed and how to get it. Every manager must constantly study the methods being used in his organization, those used in other plants and industries, and those proposed for industry in general with the idea of making

The labor cost by process and yarn number is valuable information for the chief executive. The cost of labor must be accurately known to price the finished product and to control manufacturing costs. Actual labor costs are compared with standard labor costs once each month on an accumulated basis, and when an appreciable excess is shown, a detailed analysis is made to determine the cause. Actual "cost per pound" in this chart was considered confidential information and was removed before publication.



needed changes which are constructive in the long run. He must also study the capabilities of the management personnel in his organization with the idea of improving the management by the proper combining of men and jobs.

A spirit of self-education must be developed among the management personnel, directed by the manager toward the goal of finding the best methods and using them. The small plant, with its personal contact throughout the organization, is in a very favorable position in this respect.

Proper Management Control is the Secret to Success. Decisions made by the management of any manufacturing plant, regardless of size, must be based on facts and intelligent information regarding attainable goals for each of the elements under question. These decisions, together with the exercising of directing, restraining, and governing influence over the organization, may be called management control.

The Profit and Loss Statement is probably used as the primary instrument of control in the average industrial organization. However, there is much hidden in such a compilation of figures that should be brought to light if management is to attain the highest possible efficiency. Such elements as the direct labor and indirect labor costs, maintenance and service costs, machine efficiencies, materials and supplies on hand, waste produced, and many others, must be considered in the control of plant operations.

The proper compilation of actual costs and performances provides management with one side of the picture for exercising effective control. This information is compiled through the use of a satisfactory cost accounting system.

The other side of the picture, the attainable goals for the various elements, does not come so readily. The establishing of attainable goals is not an impossible problem and is being done in plants of all types and sizes. The Industrial Engineering department furnishes this information. These goals are by no means as precise as the actual costs and performances arrived at as a result of compiling historical figures, but they can be determined with sufficient precision to give management very strong clues in making decisions.

Small Plant Defined

THE TERM "small plant" or "small manufacturer" has many different meanings. There is no fine line of demarcation between the large and the small plant. For the purpose of this discussion the small plant is defined as one having 500 direct employees or less and is independently operated. Included as small plants, in this discussion, are those employing as few as 10 to 20 direct employees.

The principles discussed apply to an organization of any size but are made applicable to plants averaging about 250 direct employees. The number of people employed or the size of the plant in no way affects the principles or application of Industrial Engineering, but does determine to some extent the amount of money that may be devoted to the work, thereby making necessary a decision as to how the Industrial Engineering may be accomplished.

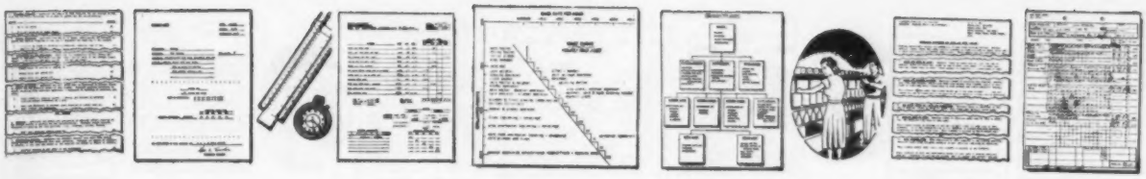
Suppose that, in a yarn mill, the direct labor cost for winding a certain yarn on cones is found to be $2.00 per 100 pounds from actual payroll figures and production. If no other information is available, management, no doubt, will think the cost to be reasonable. If figures are available, which are based on time study of the operator work, machine speed, bobbin and cone weights, and running breaks which show the attainable cost to be $1.50 per 100 pounds, management will be less likely to accept $2.00 per 100 pounds as being reasonable.

The important management control is the availability of accurate attainable goals. These goals are set by thorough study of methods of work, amounts of work, machine speeds and types, layout of equipment, condition of machinery, operator performance level, and an intelligent summation of what may be attained.

Industrial Engineering is a Practical and Profitable Tool for the Management of the Small Plant. In order that this discussion may be made as specific as possible and practical in its text, the phases of Industrial Engineering discussed are based on experiences and practices that are being used in a small cotton yarn mill in Alabama. This mill has approximately 200 employees and produces sales yarn in a highly competitive field. Raw cotton is purchased through cotton merchants and all sales are handled through commission selling agents.

Industrial Engineering in this organization is practically 100% devoted to manufacturing. The larger concerns employ Industrial Engineering to some extent in the procuring of raw materials and selling.

The chief concern of the manager, in this mill, is in keeping his overhead costs competitive with the larger mills. Of course, he has the responsibility for carrying out the necessary management functions efficiently, but this is made much simpler and more effective through the use of accurate management controls. The management functions in this mill are the same as those in a mill of 50,000 spindles or any other manufacturing organization. There are few people on the management staff, and all are versatile and capable men who have been



carefully matched to the jobs they hold.

Constant study is carried on to see that changing requirements of management and changing personalities are quickly and effectively corrected. This is a function of which the manager cannot be relieved. A properly operated Industrial Engineering program insures him sufficient time for this important function.

The small plant requires as many of the phases of Industrial Engineering as the large plant. To take a look at the multitude of things that should be covered makes the undertaking seem impossible. The hardest part of the undertaking is making the decision and starting the job. In some particular phase each plant has its weakest point. That is usually the place to start the program.

In the succeeding paragraphs, the phases of Industrial Engineering that should be covered in the small plant will be pointed out and discussed to some extent. The order in which they are listed is not necessarily the order in which the program should be accomplished.

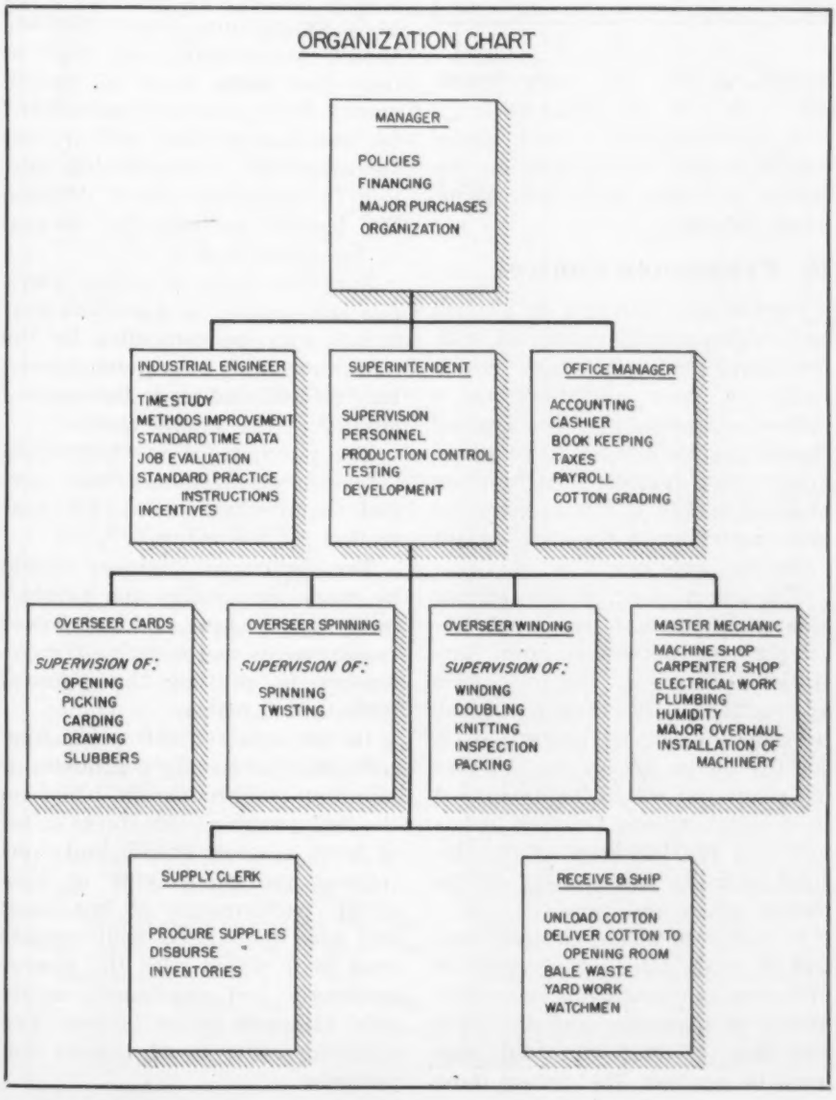
Working Program for the Small Plant

1. Organization

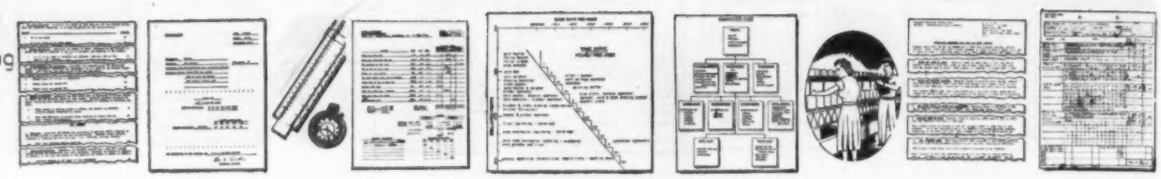
AN ORGANIZATION is the framework within which two or more persons work together to attain a common purpose. Manufacturing enterprises usually start small and gradually expand. Initially one or two men have all authority and responsibility. As the business grows the initial management organization becomes too small to be efficient and carry out all of its functions.

A planned structure of organization must be set up and put into use. This involves clearly outlining the various functions in writing and charting them. This is done without regard to personnel or individuals involved. After the organization is planned to accomplish the desired results, individuals can be selected to fill the various positions or combinations of positions most suitable for the individuals.

Certain fundamental principals of organization have been validated by experience over a period of many years. These principles of organization should be followed as closely as practicable by the small manufacturing plants as well as the large ones. It must be borne in mind that seldom may a given set of rules or principles be followed explicitly. Such is the case in setting up a manufacturing organization due to factors to be considered such as: available



Existing organization chart for small textile mill. One individual is placed in each box and is responsible for the functions indicated therein. The chart is posted or available for all employees to see. Also, note principles of organization that were followed in preparing the chart (text).



Principles of Organization

1. Build organization around functions, not around individuals.
2. Place closely related functions under same head.
3. Provide for all functions of major and minor nature.
4. Couple responsibilities with corresponding authority.
5. Define responsibilities and authority clearly so that the proper point of decision is readily apparent.
6. Assign no more than 5 to 7 subordinates to an executive position, and no more than 15 to 20 employees to a supervisor or foreman position.
7. Be sure that each man in the organization knows to whom he reports and who reports to him.
8. Develop organization with the idea of future expansion in mind.
9. Select qualified personnel within existing organization, or employ qualified personnel to take over assignments.
10. Furnish supervisors, foremen, and executives a copy of the organization chart and job write-ups, stating definitely the nature and extent of the responsibility and authority of each job.

personnel, tradition, personalities, and existing executive qualifications.

The accompanying box lists some of the most important principles of organization that should be followed in designing the organization.

The organization chart should be posted or available for all employees to see and become familiar with.

The organization of the small plant must be a subject of constant study for the chief executive. Since each man is required to be quite versatile, the matter of personalities and individual qualifications are most important factors in making proper selections for assignments. After the positions are filled, follow up is essential to determine the degree of proficiency with which each function is performed.

Weakness must be spotted early and corrections made by rearranging the functions or individuals. The tendency, in small organizations, is toward one man "know all" and "do all" set up. This must be avoided. Each man in the organization must be assigned a full complement of functions, and he must carry them out satisfactorily. Only where a plant employs one individual can one man "know all" and "do all" satisfactorily, and that enterprise most likely would be the peanut man on the corner or some other such glamorous industry.

II. Production Control

PRODUCTION CONTROL is a term or function usually connected with the large manufacturers which carry on their operations on a somewhat spectacular basis using charts, graphs, colored tickets, and many other devices. This function of management is just as essential and important in the small plant as in the large one.

The fancy devices are simply aids which permit personnel relatively inexperienced and unskilled to carry on the mechanics of production. Production control, in some degree of perfection, is carried on in every manufacturing plant and should be developed to a point where finished products can be delivered in the desired quantity and quality at the proper place and time.

In order to attain desired control of production, some system of planning and control of the movements of materials and the performance of machines and men must be devised. The system must be the result of clear thinking and full consideration of the personnel and equipment available.

Usually the superintendent of a small plant is the production control manager in addition to his other duties. If the system is well described in writing and the job broken down into parts and properly assigned to personnel of the organization, life will be much nicer for the superintendent and the flow of production much more uniform. The man responsible for sales or the selling agents must furnish the best possible sales forecast for a reasonable future period, together with confirmed orders. This information is the basis for planning production and should be available as often as once per week, if at all practicable. The control is established by designating who will be responsible for accomplishing certain functions, and being directed for specific periods, the amount to be accomplished.

Supplies, such as repair parts, oils and greases, and packing materials may be controlled by the minimum and maximum inventory method and made the responsibility of the supply clerk.

The purchase of raw materials, replacement machinery, and special requirements may be controlled by the manager.

The Industrial Engineer should be made responsible for determining the machine and manpower requirements and assisting the overseers in putting the planned layouts into effect.

In the small plant, production control is essentially a problem of planning the production, based on the best possible sales forecast, for at least a week ahead, and controlling the movements of material, performance of machines and men through a well considered plan which uses the proper personnel and equipment available, although rather limited. The planning cycle is of utmost importance.

III. Methods Improvement

METHODS IMPROVEMENT results from the proper application of motion study and work simplification principles. Any scheme that eliminates wastefulness resulting from using unnecessary, ill-directed, and inefficient motions or operations may be termed methods improvement. Studies of methods vary from a very detailed and complex nature to a very broad application of breaking a job into its major parts for the purpose of reconstructing the elements in such a way that the procedure is made more efficient. The one best way of doing any job is always sought.

The improving of methods is very essential in any concern where people are employed. Most of the large plants have an organized section of trained specialists who constantly search for the one best method for every job. In this phase of Industrial Engineering, most all of the small manufacturers are very much behind the procession, most likely because it

Machine and spindle assignment for doubler operator. Some system of planning and control of the movements of materials and the performance of machines and operatives must be devised. Fancy devices are aids which permit personnel to carry on the mechanics of production control. By using this chart the job load can be quickly calculated: All plied yarn is run through the doubling process onto a 10.25-lb package for creeling the twisters. One operator runs a Foster Model 56 doubler with 96 spindles, and always runs two or more items at the same time. The operator is assigned only that number of spindles which affords her a 100% or full job.

Doubler Operator Assignment

The amount of work required of the doubler operator to produce a pound of yarn is the same for all counts within the range 4s through 16s and for 2, 3, and 4 ply. The machine cycle varies for the different counts; therefore, the spindle assignment will be different for the various combinations of items and poundages to be run in a given period by a doubler operator.

The following example shows the method used to determine the proper spindle assignment for an operator running several different items on the Foster Model 56 doubler:

A total of 3300 lbs are to be run on an 8 hour shift. This poundage is to be run as follows:

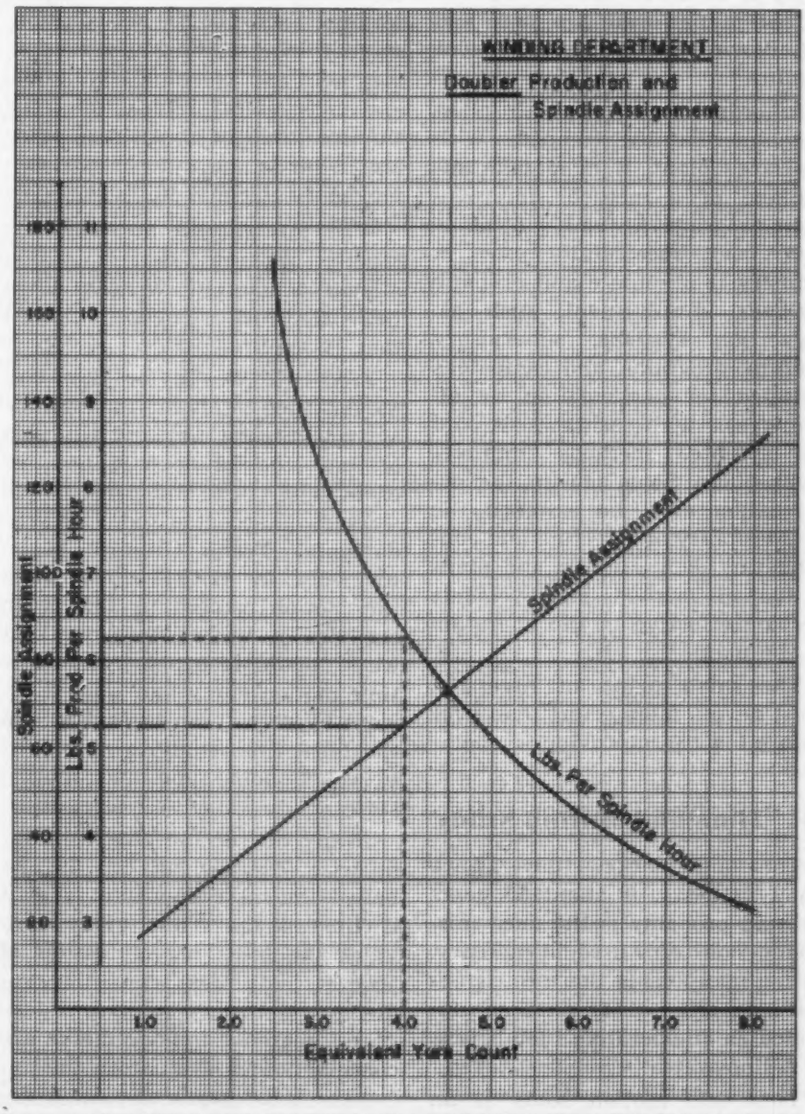
1200 lbs 8s/2
800 lbs 12s/2
400 lbs 14s/2
900 lbs 16s/2

The equivalent yarn count of 8s/2 is 4.0s. The accompanying graph shows that the production rate is 6.30 lbs per spindle hour and that a full job assignment requires 65 spindles.

8s/2 Calculation:
8 hrs/shift × 6.30 lbs/spdl hr = 50.4 lbs/spdl shift
1200 lbs to be run ÷ 50.4 = 24 spdls required
100 (24 ÷ 65 spdls for full job) = 37.0% of a job

Similar calculations for the other items and tabulation gives the assignment.

Item	Pounds	Spindles	% of Job
8s/2	1200	24	37.0
12s/2	800	24	24.8
14s/2	400	14	12.4
16s/2	900	36	27.7



seems to be expensive and elaborate for any but the large manufacturers.

Nothing could be further wrong.

As a matter of fact, methods improvement in some degree is ever present when changes are made in any plant for any reason. It is a normal and natural reasoning process that causes the man running a plant, when installing or moving equipment, to set up the machinery so that operators will have the least possible walking to do. In its simplest form, this is motion study resulting in methods improvement.

Now take the same idea and apply it to all of the motions required in performing a task and full blown methods improvement results.

In order that the small plant may successfully compete with the large plant, it must take advantage of a methods improvement program. A number of plans have been successfully used in industry to stimulate and promote methods improvement, such as: suggestion systems, supervisory training programs, and campaigns initiated for participation by all employees, with cash awards paid for accepted methods improvement plans. Some one in the organization must be assigned the responsibility of directing and consolidating data, studies, and plans so that all methods improvements become effective in the operation of the plant.

The small plant, of necessity, must devote more effort than ever before toward improving its methods.

IV. Time and Motion Study

Time and motion study, as we know it today, is about 65 years old and probably is the most misunderstood term used in industry. In too many cases the term is applied to any set of data accumulated on an operative's job by use of a stop watch.

Time and motion study is an analysis for the purpose of eliminating unnecessary operations; determining the best method of performing each necessary operation; standardizing the equipment, methods, and working conditions; and accurately determining the time required of an average operator who is an experienced employee on the job, to do the job.

Basic Elements and Break Points for Job of Running Single Yarn on 25-oz. Tubes (Foster Model 102 Winder)

Basic Element	Break Point
Start new tube	Release starting lever
Start new tube and bobbin	Release starting lever
Tie running break and start	Release starting lever
Clean out slub catcher	Release starting lever
Piece bobbins to salvage box	Release last bobbins to box
Measure and start	Release starting lever
Doff full tube	Release tube on shelf
Walk between jobs	Stop at another position

With this purpose in mind, it is readily apparent that operating a stop watch and writing down times for work elements is not all that is required.

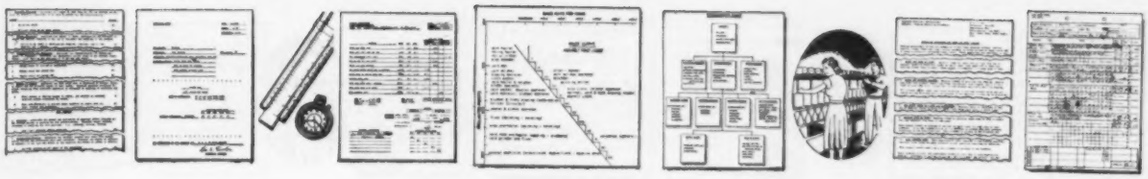
Frederick W. Taylor first employed time study in 1881 at the Midvale Steel Company. His idea of time study divided it into two parts—analytical and constructive—which is accepted today as fundamental. Frank Gilbreth began his work in motion study using the motion camera in 1885 with the idea of finding the "one best way" for doing every job. In due time motion study and time study were found to be inseparable, and the term time study is now used to cover both time and motion study.

If any one of the phases of Industrial Engineering can be labelled the most important one, it is time study. Time study provides the basis or foundation of accurate data upon which the production control system is established, methods improvements are conceived and evaluated, the incentive wage payment plan is designed, manufacturing costs are determined, and upon which management bases part or all of many necessary decisions. Together with this high degree of importance attached to time study must also be attached a high degree of capability on the part of the personnel making the time studies.

The greatest part of a time study man's work is establishing and maintaining desirable human relations. It is generally considered that not more than 25% of his effort is required in solving his technical problems. Some of the qualities he must possess in a high degree are: personality and tact, patience, judgment and self-confidence, education, analytical ability, interest, accuracy, and initiative. An individual who possesses these qualities will make a good time study man and succeed because of his own capabilities.

The time study begins with the approach to the operator; this approach is made through the foreman or supervisor. It is nothing but fair that the foreman know what goes on in his department and be considered as a contributor to successful time study.

The foreman and the time study man together select the operator and set up on which the time study will be made. It is essential that the time study man explain what he proposes to do and put the operator as much at ease as possible. The results of his time



study depend to a large extent on the cooperativeness of the operator.

When the time study man feels that he has done a good introductory job with the operator, he observes the job through several cycles and breaks it down into basic elements suitable for time study. The basic elements are described on a form used for recording time study data in such a way that it is clear what movements are included in the basic element and where the break point or end of the element occurs. For example, the basic elements for the job of running single yarn on 25 oz. tubes on the Foster model No. 102 winder, may be set up as shown in the accompanying illustration.

The basic elements are timed with a stop watch, and a record is made on the form opposite the element, of each time required to perform each of the elements during the time study. The duration of the time study should be just long enough to get a good picture of the job with all of its variables. In most cases, twenty complete cycles are sufficient, and in the case of the winding job, twenty to thirty minutes is usually long enough to satisfy the conditions of one satisfactory time study.

To time a series of basic elements, serves the purpose only of measuring the times that the operator spent performing these elements while the time study was being made. These basic element times must be evaluated in such a way that the time required of an average experienced operator is determined for doing each of the elements. This is accomplished by selecting a representative time for each basic element and applying a performance rating factor.

The operator performance rating is made for each basic element timed on a job before the time study man completes the study and leaves the job. This is where the greatest care and judgment on the part of the time study man must be exercised. Most every person possesses the ability to size up people or things. The accuracy with which this can be done depends on judgment, and the keener or more mature the judgment, the more accurate the results.

A clever traffic cop can judge automobile speeds very accurately, and a good real estate man can judge very closely the market value of a piece of property. There are many schemes for rating operator performance used by time study men in practice. Most of them prove to be satisfactory. The basis, however, for any scheme, is primarily that of keen and mature judgment, backed up by varied experience in rating operator performance.

The times recorded for each basic element during a time study are reduced to a time that is the time required for the average experienced operator to do the element exerting average effort. This

Time study made on a winding job. This is an actual time study made in the mill. The results of this study, together with several others, were used in establishing the normal element times for winding operations.

TIME STUDY SHEET
Form TCW-1

Dept. WINDING | Operation CONE WINDING | Sheet 1

Item/Yarn 8/1 SOFT 6x8 CONE | Oper. No. — | Name LAVADA TANT

Start 9:30 | Stop 10:00 | Elapsed Time 30 MINS | Observer Geo. E. Tucker | Date 6/15/48

Element	No	Times														Hi Lo	Tot No	Av	R	E/M
DOFF FULL CONE – MEAS		07	04	05	07	06	06	09	08	12	09	05	07	06	08	05	12	130		90	
		08	06	07	05												04	19	.068	5/10	.085
START NEW CONE		09	12	09	09	10	10	07	08	09	08	08	06	08			12	112		90	
																	06	13	.084	5/10	.107
START NEW CONE & BOB		14	17	12	11	12	14										17	80		90	
																	11	6	.133	5/10	.166
REPAIR RUNNING BRK		07	12	12	07	11	09	10	16	12	07	08	07	06	08	08	15	668		95	
		10	10	07	07	06	12	08	09	11	12	08	07	15	06	05	05	74	.090	5/15	.112
		07	07	07	07	10	09	14	12	14	09	12	09	10	08	08					
		06	08	09	10	07	10	(14)	14	08	10	06	05	10	09	11					
		08	09	07	09	06	10	09	09	10	12	07	09	09	07	09					
TIE IN NEW BOB		19	13	11	17	15	10	14	11	20	12	10	10	18	11	15	30	1568		90	
		10	09	11	12	13	10	18	30	10	18	11	20	11	17	14	08	115	.136	5/10	.170
		10	10	11	15	11	10	10	12	11	09	12	13	15	20	19					
		12	12	11	16	15	(27)	24	20	09	18	12	13	21	09	22					
		12	13	13	14	12	17	20	09	08	11	17	15	10	14	15					
		11	15	11	09	12	15	(32)	17	11	24	16	13	16	15	18					
		10	09	13	09	09	23	10	11	10	13	13	15	18	11	09					
		15	10	22	12	14	15	15	12	13	09	12	12								
WALK TO NEXT JOB		03	04	03	03	10	04	05	05	05	04	05	05	04	08	07	15	128		75	
		08	07	15	09	03	07	04									03	211	.004	5/15	.008
CLEAR SLUG CATCHER		18	18														18	36		75	
																	18	2	.180	5/15	.225

Prep Elements

*WHEN WALK IS MORE THAN 4 POSITIONS

TIME MISSED: 25, 30, 30, 32, 22

Study No. 48-17

time is usually called normal time. Several time studies should be made on the same job using different operators, and from these the typical or representative time should be selected in establishing the normal time for the element used in setting labor standards.

V. Standard Data

THE BASIC ELEMENTS that occur in all time studies made are listed, and the normal times for each element from each time study are recorded. Every element that differs even slightly from others is entered separately, and those that comprise no difference in operator work are posted as the same basic element, irrespective of the job being done. This recording of basic elements, together with normal times from each time study, is made on a comparison sheet. A comparison sheet is usually made up for each class of work or process in the plant.

The labor standard summary sheet for 16s/1 soft cones. The number of points per pound (standard minutes of work) are determined by combining the element times at the proper frequencies. A labor standard is established for each item being run at each process. A change in frequency of occurrence or method for doing the work that results in a 5% difference in the amount of work required of the operator must be corrected. "NM" indicates normal minutes; "OCC" indicates occurrence.

WINDING DEPARTMENT
LABOR STANDARD SUMMARY
ITEM: 16/1 - WHITE - SOFT - 6X8 PAPER CONE - SM SPIN BOB

DATE: 6/17/48
NUMBER: 53.48
SUPERSEDES: 47.47

ELEMENT	UNIT	N/M	OCC	N/M PER CONE CONSTANT INT	CONSTANT EXT	VARIABLE INT	VARIABLE EXT
Start new ~~tube~~ cone	CONE	.107	0.3		.0321		
Start new ~~tube~~ cone and bob	CONE	.175	0.7		.1225		
Tie running brk and start	BRK	.104	8.16				.8486
Tie in new bob and start	BOB	.160	10.74		1.7184		
Clean out slub catcher	S/C	.225	0.2		.0450		
Get empty ~~tubes~~ cones and distribute	CONE	.027	1.0	.0270			
Piece bobs to box at mach end	P/BOB	.030	0.04	.0012			
Measure ~~tube~~ cone	OCC	.064	0.5	.0320			
Doff full ~~tube~~ cone - measure	CONE	.084	1.0		.0840		
Mark ~~tube~~ cone with chalk	CONE	.011	1.0	.0110			
Walk between jobs	TRIP	.007	20.60				.1442
			SUB TOTALS	.0712	2.0020	.1442	.8486
			GRAND TOTAL		3.0660		

BOB WT - - - 0.297 NET
~~TUBE~~ CONE WT 3.40 NET
BRKS/LB - - 2.90

POINTS	INTERNAL	EXTERNAL
CONSTANT	1.15 x .0712 = .0819	1.15 x 2.0020 = 2.3000
VARIABLE	1.15 x .1442 = .1659	1.15 x .8486 = .9760
	.2478	3.2760
1.15 x 3.0660 =	3.52 PTS/CONE	
3.52 ÷ 3.40 =	1.03 PTS/LB	

SPINDLE ASSIGNMENT
A = (NC x 1.05) + (EXT PTS x ~~60~~ 80 DPH) / PTS/CONE x 60 DPH/HR

OPERATOR POINT HOUR	60	65	70	75	80
	32				
		35			
			38		
				40	
					43

From the comparison sheet standard data tables of element times are made up for setting labor standards. Standard data permits the setting of labor standards before a job is started in the mill, thereby covering more man-hours with labor standards. Labor standards can be set in much shorter time, and by less experienced personnel, from standard data than by direct time study on each job. Labor standards are more consistent by this method.

There is some argument on the part of management against seting standards from standard data. Some manufacturers contend that their business is different. A business may be different, but the operating requirements of operators, in various combinations of motions and basic operations, may be reduced to a comparatively small number in a plant, industry, or throughout all industry. Of course, the combinations may change to some extent from plant to plant; this accounts to a large extent for the fact that standard data must be set up for each individual plant.

Manufacturing operations that were good last year may be completely out of date today. The end products made last year are possibly not profitable this year. Raw material, the customers' specifications, machinery, and many other things are constantly changing. All of these changes result in a change of the amount of work required of operators on the various jobs throughout the mill. Standard data kept up to date furnishes the best possible means of controlling labor costs.

VI. Job Evaluation

MUCH HAS BEEN written in recent years on the subject, Job Evaluation. Quite a number of different plans have been used and publicized. All plans, however, are designed to accomplish the sole purpose of dividing any given payroll so that all jobs are paid

according to their relative worth or relative difficulty. Job evaluation is by no means a system for determining the amount of a plant's payroll.

In practice, it is assumed that the amount of the total payroll has been determined, and through job evaluation it is to be determined to what share of this total payroll each job is entitled. For example, the job of a fixer, and the job of a doffer may appear to be quite different, but if they are of the same relative worth, both should be paid at the same base rate.

There is no standard job evaluation plan which will fit any type of plant. It is imperative that each plant develop a plan for itself, along tried and proved lines, which is workable and in which all employees have confidence. Generally speaking, the jobs in a small plant are more complex than those in a large plant, due primarily to the fact that an attempt is always made to give each operator a full job, and in so doing it becomes necessary to assign the operator several jobs.

For example: a card operator in a small mill most likely will be assigned, in addition to operating cards, the operation of drawing frames. In the large mill the two jobs most likely will be assigned separately, making the job of each individual less complex and less difficult, with a lower evaluation resulting.

In evaluating a job the following major factors must be considered: skill, responsibility, physical demands, and working conditions. It has been found that the consideration of the four major factors alone will not give satisfactory results due to the complexity of the factors. Therefore, the major factors are broken down into sub-factors for evaluation purposes.

In this small yarn mill in Alabama a satisfactory plan was set up with sub-factors as shown in the accompanying box.

Major Factors and Sub-Factors for Job Evaluation Purposes
Actual Case in Small Yarn Mill in Alabama

SKILL
1. Education
2. Training
3. Complexity
4. Judgment
5. Manual Dexterity

RESPONSIBILITY
1. Responsibility for equipment
2. Responsibility for product
3. Responsibility for work of others
4. Responsibility for the safety of others

PHYSICAL DEMANDS
1 Mental effort
2. Visual effort
3. Physical effort

WORKING CONDITIONS
1. Unavoidable hazards
2. Surroundings

Regardless of how large or small a concern may be, its supervisors can profit from a knowledge of job evaluation principles. If nothing else, it will give them a greater understanding of the jobs they are supervising.

The committee system is the

The job evaluation chart for hourly paid employees. Each hourly paid job is described in detail and evaluated in terms of points in accordance with the chart. The base rates of the jobs are determined by use of the Wage Curve (see illustration) which gives the relation of total points in a job to hourly base rate.

1. Training Required - Appraises the length of time required for the average person, with the education specified, to be able to peform the job satisfactorily.

Degree		Points
1	Up to one month	30
2	Over one month up to three months	60

2. Manual Dexterity - Appraises the amount of speed, coordination and deftness of senses and muscles required in the use of equipment and handling of the product.

1	Little or no speed or coordination required, reaction time of the operator not a factor	15

2. Responsibility for Equipment - Appraises the responsibility for preventing damage to equipment. Determine the approximate dollar value of the average single mishap. Also consider the possibility of salvage and repair.

1	Damage would be trivial or negligible	20
2	Damage would not exceed $10	40
3	Damage would not exceed $50	60

4. Safety of Others - Appraises the care which must be exercised to prevent injury to others and the probably extent of such injury. Consider possible accidents to others resulting from incorrect operation of equipment or handling of materials and tools.

1	Small chance of causing injury to others, job located in isolated location seldom frequented by others	8
2	Some care necessary to prevent minor injuries to others such as, cuts, bruises and abrasions	16

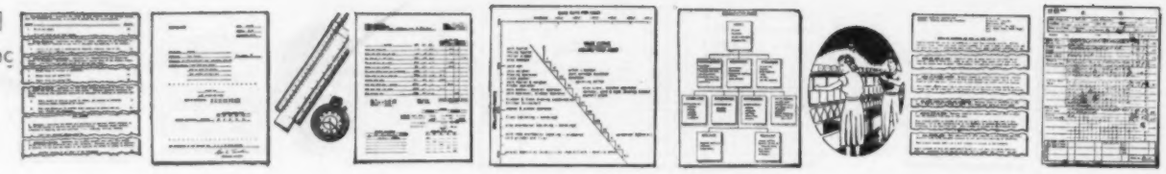
III. EFFORT

1. Physical - Appraises the amount and continuity of physical effort required of the average person to perform the job satisfactorily. Consider weight handled, frequency of handling and work position - i.e., standing, sitting, bending

1	Very light physical effort required	20

1. Unavoidable Hazards - Appraises the accident hazards that exist even though safety devices and procedures have been installed. Consider the degree of exposure to hazards, or the type and extent of the injuries the worker is likely to receive.

1	Accident hazards do not exist or are negligible	13



Standard Practice Instructions
Subject: Winding Operating Procedure

S. P. I. #3
Effective: 6/17/48
Supersedes: New
Distribution: Ind Engr, Supt, Oseer Wind, Oseer Night, File

OPERATING PROCEDURE FOR CONE AND TUBE WINDING

Winding operations include the packaging of yarn from spinning boobins, twister bobbins, cones, tubes and other similar packages to cones on wood or paper cores and to tubes on plain or perforated paper cores. These operations are performed on the

1. START NEW CONE OR TUBE- Operator takes an empty cone or tube from top of machine, apron or creel pin, picks up end of yarn, wads about 12" of yarn into cone and places cone on arbor (when pigtail is required) or places cone or tube

5. CLEAN OUT SLUBBER CATCHER- Operator stoops to position from running, removes yarn from slub catcher, pulls slub from slub catcher with fingers, pulls or cuts fluff or slub from yarn, places yarn in slub catcher and starts position running.

This element occurs each time a slub builds up in the slub catcher which has not caused the end to break and in the opinion of the Operator a break can be prevented

6. GET EMPTY CONES OR TUBES AND DISTRIBUTE- Operator walks to container at the end of machine, picks up cones or tubes, puts tubes into apron or walks along

8. MEASURE CONE OR TUBE- Operator stops at position where cone or tube is about full and measures with cone or tube gage.

This element occurs an average of one and one half times for each cone or tube produced. It is the responsibility of the Operator to produce finished packages accurately to the specified size. This element is allowed in the Standard one

11. WALK BETWEEN JOBS- Upon completion of work required at one winding position, Operator walks along assigned spindles to next position requiring an operation.

This element occurs each time a work element is allowed in the Standard.

Minor elements of work and unavoidable delays of less than 12 minutes duration such as: stoppages for piling and fixing, wait on cleaner and sweeper, get pay

Standard practice instruction sheets should be prepared for every operation. This one is for winding operators; it requires almost four typewritten pages. These sheets are used for training new operators, instructions for supervisors to follow in seeing that work is being properly performed, and describing the work covered by labor standards (what is to be paid for).

best for developing an evaluation plan and administering it after it is in operation. The committee of the mill being studied was made up of the superintendent, the overseers, and the industrial engineer.

Base rates set by job evaluation are almost a must in the small plant because of the complexity incurred in jobs as a result of fully assigning operators, and the marked effect yarn changes make in job contents.

VII. Standard Practice Instructions

ALL MANUFACTURING concerns should have a system for carrying out the various activities and performing the work. A system of this sort is usually called Standard Practice Instructions and constitutes write-ups of approved procedures.

Standard Practice Instructions provide a bench mark for improving methods, procedures, and all the functions of the organization. They stand as the "one best way" for doing each job as of the date shown, subject to revision when a better method is established.

They also serve as instruction sheets for training new employees and describe in detail the specifications of all jobs for the purpose of showing what is to be paid for in each labor standard.

The Standard Practice Instruction system should not degenerate into a system of red tape, but should be kept accurately up to date and constantly referred to in operating the plant. When changes occur that are approved by proper authority, a new instruction sheet is written and distributed to the personnel concerned. The obsolete ones are destroyed. Only the people concerned should get copies so that others will not be covered up with information for which they have no use. The master file of all sheets should be kept by both the superintendent and the Industrial Engineer in the small plant.

Properly written up and used, Standard Practice Instructions take the guess work out of operating a plant.

VIII. Incentive Wage Payment Plan

INCENTIVE PLANS in industry are divided into two general classifications, financial and non-financial. The more sensitive and effective of these is the financial incentive. There is a definite place for both types of incentives, and the ideal situation is a set up where the two are used as complements to each other.

The Industrial Engineer is more concerned with the financial incentive, leaving the non-financial incentive to the personnel relations department with a full realization that his work must tie in closely with those of personnel relations.

An incentive wage payment plan is a method for paying employees in some degree for the result of their efforts and skills rather than for the time they spend at work. It is to be desired that each individual in an industrial plant have a desire to produce up

to his top capacity. Many types of incentive wage payment plans have been devised and put into practice with varying degrees of success. The known plans will be further refined and improved with more experience in their application.

Wage incentives apply to human beings, and any fundamentally sound plan will fit into any plant, large or small, and into industry. Successful incentive wage payment plans are in use today in plants employing from six or eight employees to those employing several thousand. More success seems to be found in the small plants where decisions can be made by top management, on the spot, without the time consuming process of contacting some distant headquarters.

It is only a matter of time until most all successful industries will pay their operatives for the results of their efforts and skills rather than for the time they spend on the job. Experience has shown that the average employee who is paid by the hour produces about half of the amount of that produced by the employee who is paid by a sound incentive wage payment plan. Only those industries that have a monopoly in a field can afford to pay employees on a basis of time spent on the job.

A poorly designed and poorly administered incentive wage payment plan is not as good as straight hourly pay. The decision by management to install an incentive wage payment plan carries with it additional grave responsibilities that must be accepted by management. It causes an already good management to do a lot more hard work, and above all, the incentive plan cannot be considered as a substitute for management. Neither can it be considered as a cure-all for management ills. The first prerequisite for a successful incentive wage payment plan is a good management.

The installation and operation of a successful plan is divided into six steps:

(1) Decision by Management. The man in responsible charge of making major decisions and establishing policies, together with top men in the organization, must study and investigate the subject as thoroughly as possible with the idea of selecting several plans that appear suitable and most important of all, get some idea of the responsibility management will be required to assume in connection with the incentive wage payment plan. When these men of the top management feel that they are somewhat familiar with the problem, they may decide to install some type of plan and start the ball rolling, fully resigned to give it management's complete backing.

(2) Time Study of Jobs. Detailed time studies must be made,

OPERATION SHEET

DATE: 6/17/48

NUMBER: 53.48

SUPERSEDES: 19.47

DEPARTMENT: Winding

OPERATION: Cone Winding PAY GRADE: IV

ITEM/YARN: 16/1-White-Soft-6x8 Paper Cone-Small Spin Bob

MACHINE & SET-UP: Foster #102 Cone Winder

Take up speed 440 yds/min

Slub catcher setting 0.012

____ POINTS PER ____

1.03 POINTS PER POUND

RATE OF PRODUCTION: 59 lbs per hour @ 60 pt/hr
73 lbs per hour @ 75 pt/hr

		OPERATOR POINT HOUR				
		60	65	70	75	80
MACHINE ASSIGNMENT:	Spindles	32	35	38	40	43

FOR DESCRIPTION OF WORK ELEMENTS SEE S. P. I. #3 Dated 6/17/48

Geo. E. Tucker

INDUSTRIAL ENGINEER

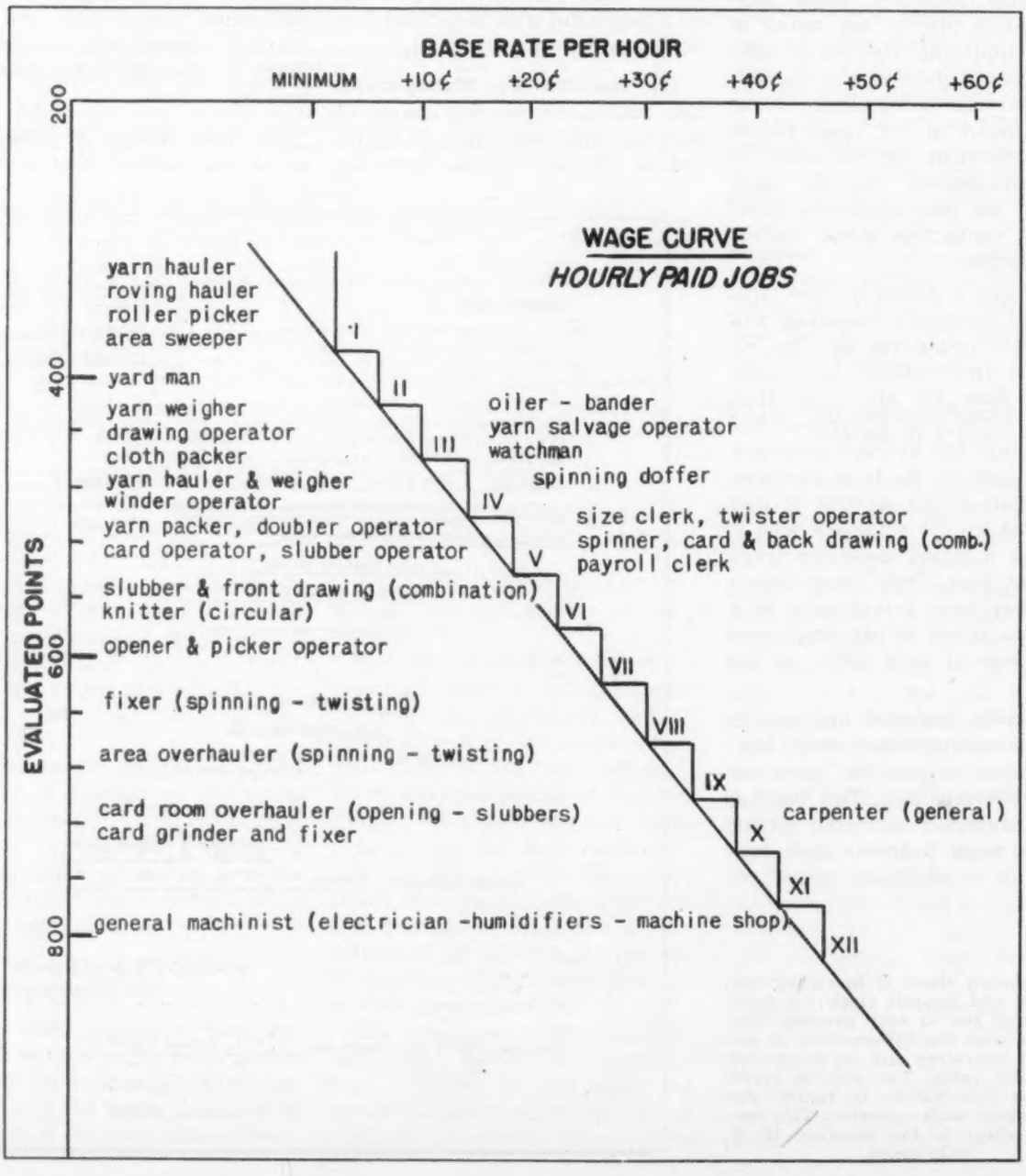
An operation sheet is furnished the overseer and payroll clerk for each item being run at each process. The overseer uses the information to assign the operators and to determine production rates. The payroll clerk uses the information to figure the daily pay of each operator. This operation sheet is for winding 16s/1 soft cones.

by a competent engineer, of all the elements of work done in the plant. In some plants this may be done on a departmental basis, and in some on a plant wide basis. The results of the time study are listed so that a standard time for each work element may be established.

(3) Standardize Methods. From the time study data, the application of "methods improvement" methods, and experience of both the supervision and the time study engineer, each job must be set up to be operated the best possible way. The operators must be instructed and required to perform the jobs according to the approved methods. After the jobs are being properly performed, any further time studies necessary are made.

(4) Setting Labor Standards. A labor standard is set for each job in the plant according to the ap-

The wage curve for hourly paid jobs. This wage curve (straight line) was established from wage data from the entire textile industry. The wage line is divided into twelve brackets with $0.04 jumps. When a job has been evaluated and the total number of points determined for the job, the hourly base rate is read from the chart. (In actual use.)



proved method and using the standard time for the elements found by time study.

(5) Application of the Incentive Plan. The application of the labor standards and the incentive wage payment plan should be made by an official notice signed by the management, stating the time it will go into effect, the stipulations of the plan, and an example of the method of figuring an operative's pay.

It is essential that all of the supervisory personnel be thoroughly familiar with the plan before it is put into effect, and that they are made to feel responsible for its success. In the early stages of the application there are many questions and misunderstandings on the part of the operative that must be properly answered and explained as soon as they become known.

(6) Administration and Maintenance. The successful operation of an incentive plan depends almost entirely on the kind of administration and maintenance it gets. The life and usefulness of any tool is greatly diminished by neglect, and this is quite true of the incentive plan. Changes in methods in doing the work, the material being used, and the machines on which the jobs are performed will result in changing the amount of work required of the operators. These changes cannot be predicted, and certainly, labor standards cannot be set so that an automatic correction for changes is built into them.

It is well known in the cotton textile industry that there are constant variations in the cotton, atmospheric conditions in the mill, machinery wear, and many other factors which affect the ends down or running of the work in all processes. These change the amount of work required of the operators and must be handled in a sound and fair manner.

The small plant, in many cases, is a job shop running a variety of counts, items, and put ups. To set an average standard for winding any count or any package put up will never result in equitable labor standards, and will result in poor morale because of an abnormal spread in operator earnings.

The wage incentive plan must be designed to facilitate its administration and maintenance in every case. Many plans that were successful in the beginning have failed over a period of time because of difficulty and failure to properly administer and maintain them.

Some of the characteristics that a good incentive wage payment plan must have are:

1. All labor standards based on a normal operator.
2. Operators guaranteed a base rate for each hour worked.
3. Earnings above the base rate equivalent to production above normal.
4. Labor standards guaranteed irrespective of earnings.
5. Substantially all work cov-

How to Figure a Day's Pay

Examples of How to Figure a Day's Pay are posted on the bulletin board in each department when the department is put on the Incentive Wage Payment Plan. Both supervisors and operators are instructed in the calculations so that the pay of any job can be figured.

Spinners

Spinners are paid individually for the number of hanks produced, during a work period, on the machine sides to which they are assigned. A point standard is established for each type of yarn and conditions specified on the Operation Sheet.

Spinners will be paid the base rate $0.78 per hour for each hour worked on the spinning job and will be expected to produce 60 points per hour to earn the base pay. In addition to the base pay, they will be paid premiums for all points produced in excess of 60 points per hour.

The following example shows how a day's pay is figured:

If a spinner is assigned two (2) sides of 8s Soft for which the point standard is 11.1 pts per side hank, and five (5) sides of 12s Warp for which the point standard is 9.94 pts per side hank; and produces during an 8 hour shift:

8s Soft; 9.7 and 9.8 hanks

12s Warp; 8.5, 8.4, 8.6, 8.6, and 8.5 hanks; her pay is computed as follows:

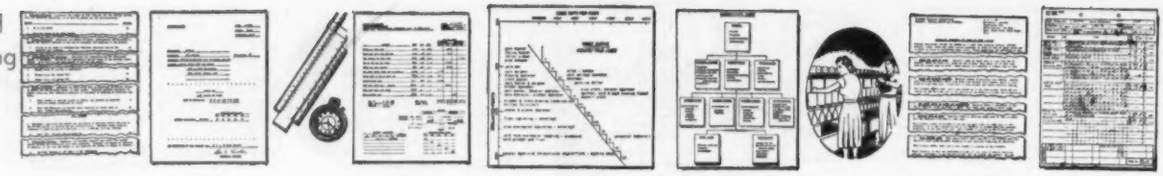
9.7	hanks	×	11.1	pts/side hank	=	107.7	pts produced on 1 side of	8s	Soft
9.8	hanks	×	11.1	pts/side hank	=	108.8	pts produced on 1 side of	8s	Soft
8.5	hanks	×	9.94	pts/side hank	=	84.5	pts produced on 1 side of	12s	Warp
8.4	hanks	×	9.94	pts/side hank	=	83.5	pts produced on 1 side of	12s	Warp
8.6	hanks	×	9.94	pts/side hank	=	85.5	pts produced on 1 side of	12s	Warp
8.6	hanks	×	9.94	pts/side hank	=	85.5	pts produced on 1 side of	12s	Warp
8.5	hanks	×	9.94	pts/side hank	=	84.5	pts produced on 1 side of	12s	Warp

			640.0	total points produced
subtract: 8 hrs on std	×	60 pts	= 480.0	points to earn base pay
			160.0	premium points
8 hours worked	×	$0.78	= $6.24	base pay
160 prem pts	×	$0.78	= 2.08	premium pay
		60	$8.32	total pay earned by Spinner

$$\text{Spinner performance} = \frac{640}{60} = 80 \text{ pt/hr}$$

$$\text{Hourly earnings} = \frac{\$8.32}{8} = \$1.04 \text{ per hour}$$

(For other examples, see the next page)



ered by incentive wage payment plan.

6. Simple methods of computing pay, easily understood by operator.
7. Labor standard set before new job is started.
8. Each operator individually paid for what he does.
9. Well planned system for maintaining proper labor standards in effect with changing conditions.
10. Labor standards and results of incentive plan used as management control.

HOW TO FIGURE A DAY'S PAY

Card Room

Picker, card and back drawing, and slubber and front drawing operators are paid individually for the number of hanks run during a work period. A point standard is established for each job and applies only to the job specified on the Operation Sheet.

Operators will be paid the base rate of the job on which they work for each hour worked and will be expected to produce 60 points per hour to earn the base pay. In addition to the base pay, operators will be paid premiums for all points produced in excess of 60 points per hour.

The following examples show how a day's pay is figured.

I. Picker Operator. If a picker operator produces 11.0 hanks during an 8 hour shift, for which the point standard is 55.4 pts/hank, his pay is computed as follows:

11.0 hanks × 55.4 pts/hank = 609 points produced
subtract: 8 hours on std × 60 pts = 480 points to earn base pay

129 premium points

Base pay 8 hours worked × $0.87 = $6.96

129 prem pts × $\frac{\$0.87}{60}$ = 1.87 premium pay

$8.83 total pay earned by Operator

$$\text{Operator Performance} = \frac{609 \text{ pts}}{8 \text{ hrs}} = 76 \text{ pt/hr}$$

II. Card and Back Drawing Operator. If a card and back drawing operator produces 30.3 hanks, during an 8 hour shift, for which the point standard for operating cards is 6.95 pts/hank and for back drawing 3.65 pts/hank, his pay is computed as follows:

*2 × 30.3 hanks × 6.95 pts/hank = 422 points produced on cards
*2 × 30.3 hanks × 3.65 pts/hank = 221 points produced on back drawing

total 643 points produced
subtract: 8 hours on std × 60 pts = 480 points to earn base pay

163 premium points

Base pay 8 hours worked c $0.81 = $6.48

163 prem pts × $\frac{\$0.81}{60}$ = 2.20 premium pay

$8.68 total pay earned by Operator

$$\text{Operator Performance} = \frac{643 \text{ pts}}{8 \text{ hrs}} = 80 \text{ pt/hr}$$

*Hank clocks being used at present measure only ½ of actual number of hanks run.

III. Slubber and Front Drawing Operator. If a slubber and front drawing operator produces, during an 8 hour shift, 41.1 hanks on front drawing for which the point standard is 3.59 pts/hank and 14.5 hanks on slubbers (intermediates) for which the point standard is 34.1 pts/hank, his pay is computed as follows:

41.1 hanks × 3.59 pts/hank = 148 points produced on front drawing
14.5 hanks × 34.1 pts/hank = 495 points produced on slubbers

total 643 points produced
subtract: 8 hours on std × 60 pts = 480 points to earn base pay

163 premium points

Base pay 8 hours worked × $0.84 = $6.72

163 prem pts × $\frac{\$0.84}{60}$ = 2.28 premium pay

$9.00 total pay earned by Operator

$$\text{Operator Performance} = \frac{643 \text{ pts}}{8 \text{ hrs}} = 80 \text{ pt /hr}$$

IX. Accurate Pricing

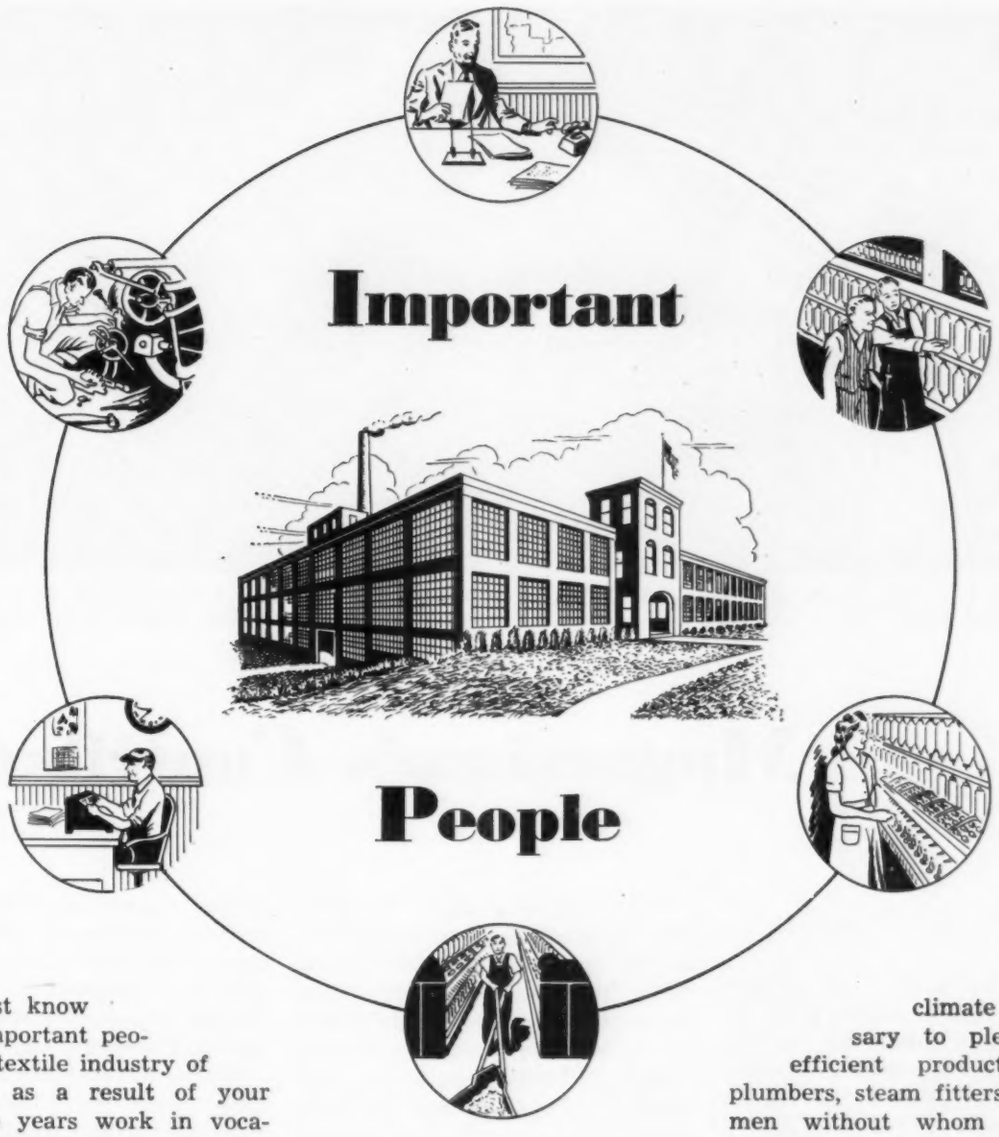
MOST MANUFACTURERS sell their products at the highest price that anyone will pay for them. This is fine when products are bought from the man who can and will deliver the goods with price as a secondary consideration. On the other hand, when competition becomes keen, and the price is the primary selling point, accurate pricing is a necessity. There are many manufacturers who do not know what it costs to manufacture an item, particularly where several different items are made. Too many depend on the profit and loss sheet to see how things are going.

The determination of accurate prices involves the proper distribution of all costs of manufacture and includes a reasonable profit for the stockholders or owners. This price should be known before the first item is sold or even put into production. The price paid for supplies, materials, power, and other items of burden and overhead are pretty much the same all over and require only a proper method of control and distribution to the various items manufactured. The labor costs and machinery in operation costs are the ones the industrial engineer must pin down.

Operatives who work on day work have effective work loads varying from very small to as much as the foreman can get them to do. With no accurate measurement of the work, the cost of an item may vary very widely from one operator to another and from one day to the next. A change in supervision will show a marked change in labor costs. The variations in operator performance cause a variation in machine efficiency, resulting in wide variations in machine cost.

The installation of an incentive

(*Continued on page* 185)



Important People

By LOUI GREET

Former Director
Vocational Education
Parker School District
Greenville, S. C.

EXCLUSIVE

"YOU must know a lot of important people in the textile industry of the State, as a result of your twenty-two years work in vocational education," an acquaintance said the other day. My reply was that I did know a good many of the top executives, but that most of my work had been done with the operating executives and supervisors.

This answer seemed to be the right one, until I thought it over later. Then I realized that it was only partially right.

I should have said: "Yes, I know a good many of the supervisory and management group, but I also know other *important* people who are helping to run the industry.

"I know the men and women who operate the machines that turn out the production, and I know the fixers who keep those machines in operating condition, and the people who inspect, grade, and ship the finished product.

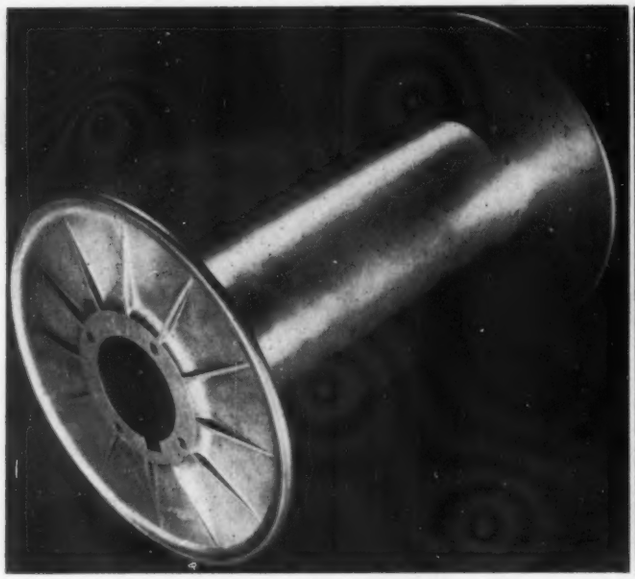
"Furthermore, I know the sweepers and cleaners without whose services production would eventually have to stop because the alleys would become impassable. Yes, and I have met the men and boys who push the hand trucks that bring the raw materials to the machines and take away the finished products.

"Besides these, I know some important people in the master mechanics department: the electricians, who keep the hundreds of motors and thousands of lights functioning; the air conditioning mechanics who create that ideal climate so necessary to pleasant and efficient production; the plumbers, steam fitters, and firemen without whom the plant would have to close down—in fact—could not start; and the machinists who repair and manufacture machine parts so necessary to smooth production.

"All those I know down in the plant, but they are not all of the important people I know. There are the pleasant and accommodating girls at the switchboard who help me find the person I want to see. There are the people in production control in the laboratories, all of whom are so essential to modern manufacturing.

"And last, but by no means least, there are all of the clerical workers who so greatly multiply the efficiency of those for whom they work."

So, I think that my answer should have been: "Come to think of it, I don't believe I know anyone in the textile industry who is unimportant."



Warp beams for tricot knitting provide an especially successful application of magnesium in textiles.

The cost of this fabric tube has been substantially reduced by manufacturing it from magnesium tubing.

Magnesium's Contribution

EXCLUSIVE

*Staff Prepared**

THE APPLICATION of lighter metals in machine parts to attain greater production speeds and efficiency has taken a leading role in the progress of the textile industry.

Beams and Spools. Tricot warp, loom, and section beams made of magnesium were tried several years ago. These lightweight parts increased ease of handling and allowed greater production speeds, consequently they opened the field to other innovations and experimental applications. The advantages soon were recognized, and magnesium parts have been accepted as "standard" equipment in many instances.

In the manufacture of tricot knitting machines, the rate of cycles per minute was increased from 350 cycles per minute up to as high as 800 by adapting magnesium for reciprocating parts, including the needle bar, presser, sinker, guide, and cover bars.

Warp beams or spools for tricot knitting provide an especially successful application of magnesium. Beam heads are permanent mold cast and welded to extruded tubular barrels, resulting in a unit of notable strength, lightness, and stability of dimensions. Its light weight has allowed producers to run their yarn directly onto the beam, thereby eliminating shipment of small cones and the extra step involved in rewinding the yarn from cones onto a beam. The magnesium beam protects the yarn in shipment, keeps it ready for use on the knitting machine when it arrives, and lowers shipping costs when beams are returned to the yarn producer.

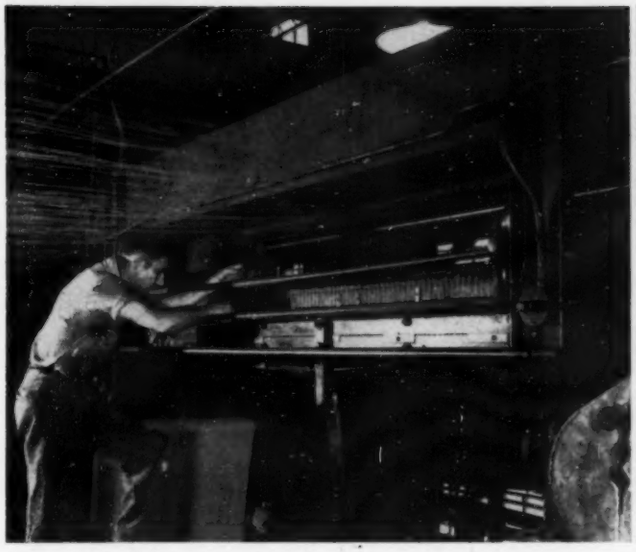
The magnesium section beams, being lighter in weight than wooden beams or beams made from other structural metals, permit a considerable saving on freight charges when they are used for shipping yarn.

Strength, resistance to corrosion, durability, the freedom from warping which results in truer running beams and better cloth, light weight, and the fact that magnesium can be extruded into many irregular shapes are attractions which make magnesium desirable for use in textile machinery and equipment.

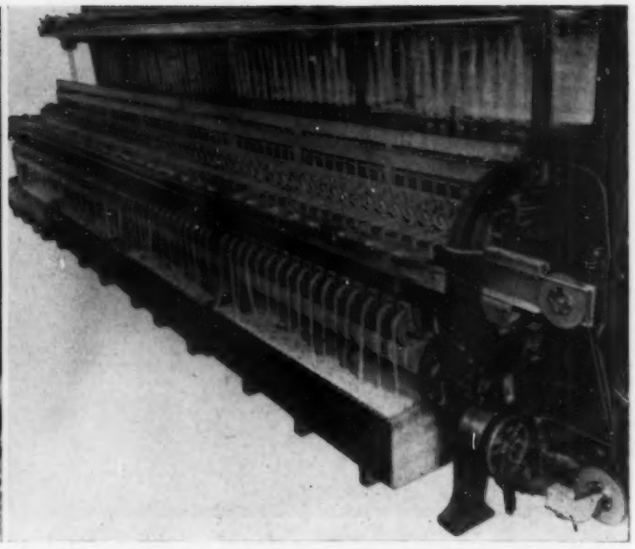
Another excellent application of this light metal is in roving spools, sometimes called jack-spools. In this instance magnesium die castings are combined with

MAGNESIUM, industry's lightest structural metal, is being used in many textile machines, helping to bring greater precision and economy to textile operations. This article enumerates some specific applications and advantages which recommend magnesium for further use in the textile field.

*Based on information furnished by the Magnesium Division, The Dow Chemical Co., Midland, Michigan, producers of magnesium.



Magnesium thread guides have been in operation for fifteen years on this bag making machine.



Fifty per cent increase in speed of this narrow fabric loom is attributed to use of a magnesium lay beam.

to the Textile Industry

fluted magnesium tubing which forms the barrel of the spool. The tubing has a 0.100-inch wall which provides rigidity and strength, with a minimum weight factor. The flanges are die cast and are held onto the barrel by a spring which runs inside the barrel from one side to the other. By die casting the flanges, fittings are eliminated, and the finished parts are strong and sturdy. The combination of spring, flanges, and tubing, results in a rigid spool which can absorb shocks instead of bending or breaking under the occasional abuse to which it may be subjected.

According to users, the magnesium spools run true on the spinning frame and allow more roving to be run off the spool. On a magnesium roving spool, the few turns of excess roving may be slid down to one end and be removed by using a hook-knife without nicking the barrel.

Both magnesium's durability and the noteworthy weight reduction it permits led to the choice of this metal for use in the application. The jackspools can be easily transferred from the card to the spinning frame.

Magnesium does have a higher initial cost.

Portable Storage Bins. Another application in which light weight is of primary importance is in portable wool bins. Bins made of magnesium are usually 12 feet long, four feet wide and six feet high. They are light in weight and of sufficient capacity to transport 1,000 pounds of raw wool. The bins are made of magnesium sheet with external stiffening ribs used on the sides, and they can be moved about the mill easily in comparison to the heavy structures previously used.

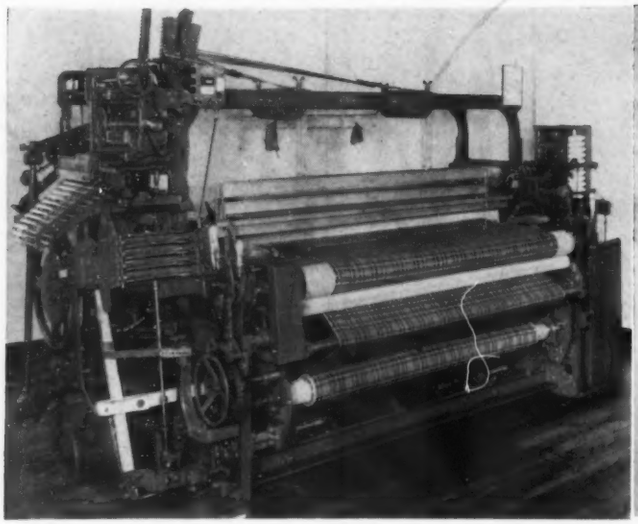
Weaving. A lay beam for use on a narrow fabric loom is an outstanding and recent development in which 116 pounds were saved by replacing wood with magnesium. The five-inch channel section of magnesium is 21½ feet long, but it weighs only 64 pounds. The wooden beam of comparable size weighed 180 pounds; therefore on the beam alone, a 64 per cent weight reduction is obtained.

The shuttle blocks carried by the magnesium lay beam are supported by magnesium castings and a magnesium rail; therefore greater lightness is achieved, and further savings are made possible.

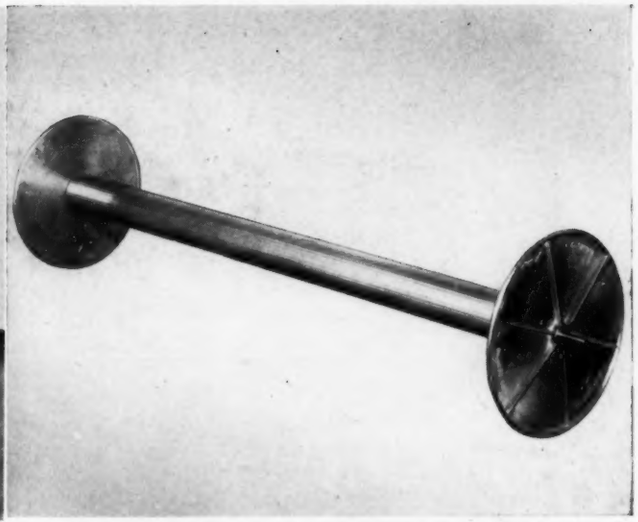
Even more impressive is the fact that this lighter weight permitted a simplified design on the entire lay motion assembly so that

SOME PRACTICAL CHARACTERISTICS OF MAGNESIUM

1. Light in weight.
2. High strength to weight ratio.
3. High degree of dimensional stability.
4. Excellent machining qualities.
5. Rapidly dissipates vibration.
6. Resistant to corrosion.
7. Can be extruded into irregular shapes.



A magnesium hand rail is employed on this Crompton & Knowles dobby loom.



Magnesium jackspools do not warp or splinter; also are light in weight.

overall weight saving was appreciable. The lay assembly required for the wooden lay beam weighed 525 pounds; the new lay assembly necessary for the magnesium beam weighed only 290 pounds.

The aforementioned changes permit higher loom speeds. Increased production at lower cost is achieved because the lightweight magnesium beam requires no more power at the higher speeds than was formerly required by the heavy models at the slower speed. The consequent increased capacity of each loom is, realized in terms of floor space gained since more fabric can be woven per machine.

Applications in Knitting. Needle bars of magnesium are now being widely used on full fashioned knitting machines. In such rapidly reciprocating parts, the light weight increases speeds without increasing the amount of power required.

Extruded magnesium tubing, flared at one end, is used for fabric tubes which fit into the center cylinder of the seamless hosiery knitting machines. The interior surfaces of the tube must be smooth to prevent snagging of the hose. Another metal previously used, was an expensive and scarce material which had to be rolled, soldered, and highly polished on the interior. Magnesium tubing needs only to be flared and given a smooth anodic treatment.

Lightweight metals are increasing speed and production in the textile industry. The experimental applications have proved the worthwhile merits of magnesium in textile applications.

New Standard for Wool Top in Army Serge

In recognition of basic trends in the world wool situation, the Quartermaster Corps, Department of the Army, has announced the selection of a new standard of wool top to be used for Army serge. It was pointed out that this new standard of wool top would not be applicable to current procurements for which invitation to bids have been sent to the trade, but would be used after a set date on new procurements.

The development of this standard of wool top is the result of studies made by the Research and Development organization of the Quartermaster Corps working jointly with the Wool Industry Committee of the Quartermaster Association as a technical advisory group to the Department of the Army.

With the sharp post-war reduction in domestic wool supply and the rising proportion of medium grade wools in world production, it has been recognized by the Quartermaster Corps that specifications for Army worsted fabrics in time of a national emergency should be based upon a broader range of available wool grades. Accordingly it was decided sometime ago that a careful exploration should be made of the possibilities of substituting a wool top made from graded commercial half blood wools for the present standard 60's grade of wool.

Though this involves no basic change in the wool grade nomenclature whatsoever, it has the advantage of using an accepted commercial grade which will allow the use of a broader base of fibers than is included in the U. S. D. A. standard for 60's.

AIEE Conference on Textile Industry

The American Institute of Electrical Engineers will sponsor jointly with the Georgia Institute of Technology a conference on the textile industry. The two-day conference will be held at Georgia Tech on May 26-27.

Modern package dyeing facilities recently placed in operation by Alabama yarn mill.

Wehadkee's Versatile Dye Plant

Staff Prepared

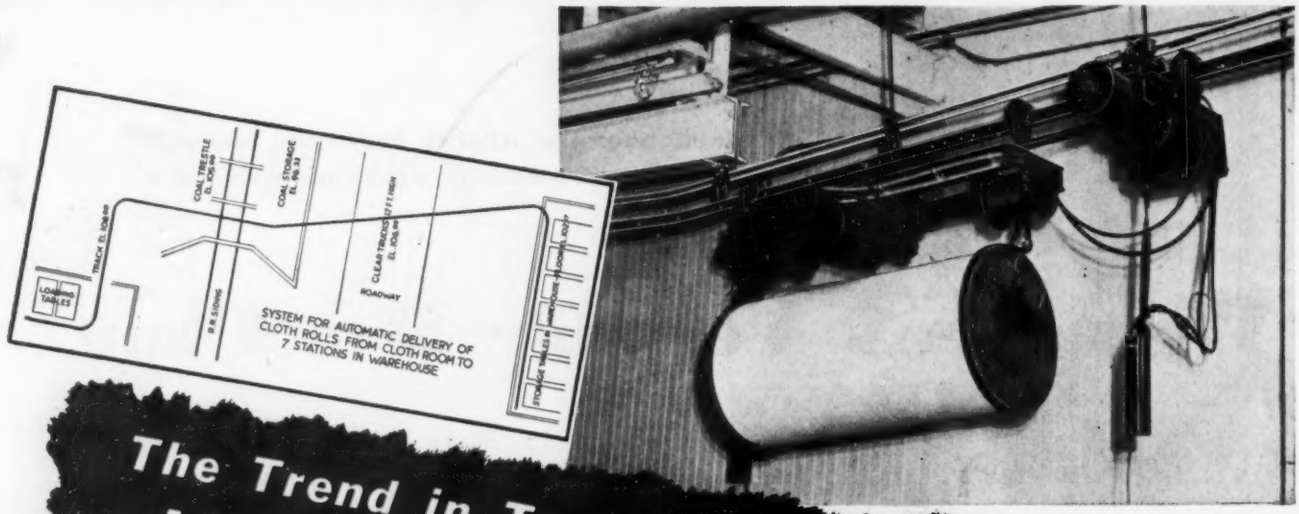
A MODERN dye plant has been placed in operation at Talladega, Alabama, by Wehadkee Yarn Mills. Designated the Chinnabee Dye Division, the building proper is 48 feet by 76 feet. A section of one warehouse with a concrete floor was remodeled, and all of the ground level floor was used as a basement.

The mezzanine floor extends half the length of the dye room and is of brick construction with steel sash, steel "I" beam supports, and a concrete floor. Future expansion was provided for by pouring one half of the concrete slab with openings for the dye machine kiers and all piping connections. The other half of the mezzanine was poured leaving identical openings for equipment, but the openings were capped over. At any future date, when additional dyeing units are desired, the mezzanine can be extended the full length of the building, and the capped openings will be available for additional equipment.

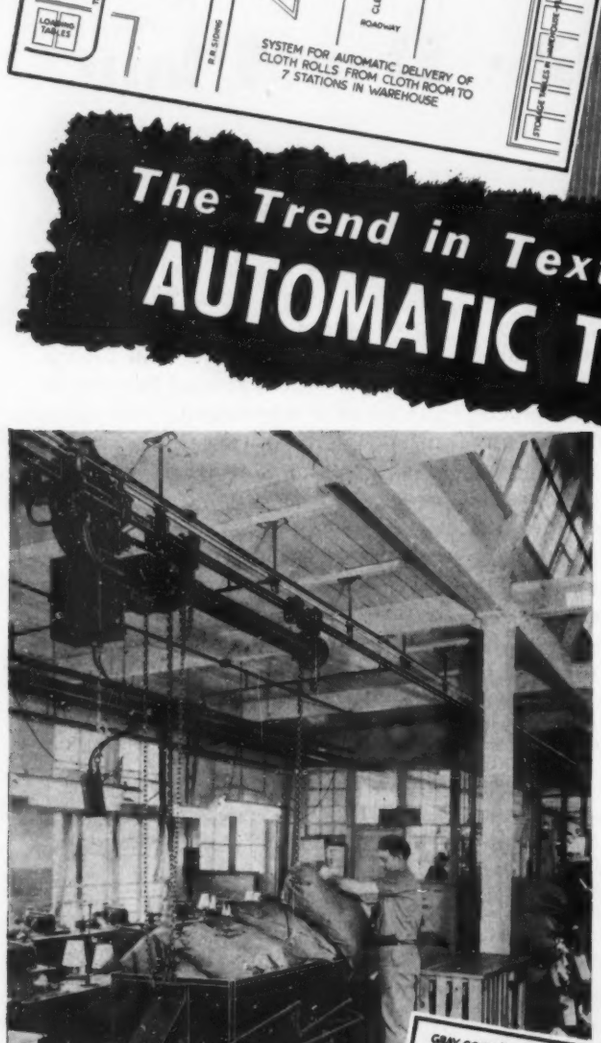
The dye storage room, laboratory, and office located on the mezzanine floor can be moved to the far end of the building if additional equipment is installed. All primary water, steam, and return line pipes on the ground floor were placed at a convenient level so as not to interfere with the extension of the mezzanine floor at any time in the future.

Dyeing and Bleaching Machinery. The Abington stainless steel dyeing machines are of the upright

The lids on the dyeing machines are counterbalanced. Note automatic control panels. The operative is using an electric hoist to lift the carrier loaded with dyed packages from the machine. Openings in the concrete floor allow the kiers to extend to the ground floor where valves and motors are easily accessible.

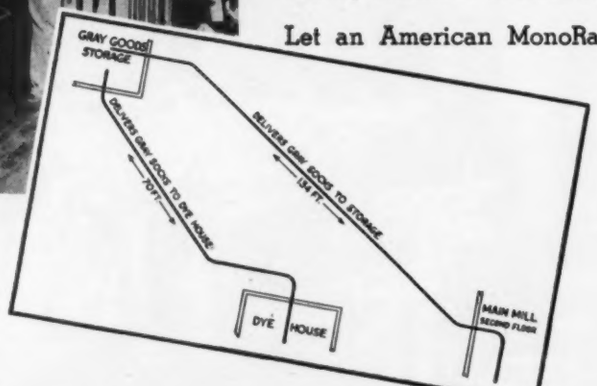


The Trend in Textile Handling is toward AUTOMATIC TRANSPORTATION



High labor costs — heavier unit loads — increasing maintenance expense have brought about a change from manual to automatic transportation of hard-to-handle textile loads. And American MonoRail equipment has been getting the call.

Illustrated at top is a system where beams of cloth travel from automatic pick-up to any of seven tables in the warehouse. Carrier unit can be set for twenty trips at control panel to operate continuously without further attention. Left, is a system for automatic dispatch where gray goods are transferred between buildings. Carrier dumps and returns to loading station by means of electric control.



Let an American MonoRail engineer explain cost-saving advantages in detail. Send for fully illustrated catalog "Automatic Cleaning and Overhead Handling for Textile Mills".

THE AMERICAN MONORAIL COMPANY

13106 ATHENS AVENUE CLEVELAND 7, OHIO

kier type. In this system two kiers constitute one unit with a capacity of 300 packages of yarn to each kier, making a total of 600 to 700 pounds of yarn per unit. There are two units in this layout.

Type 316 stainless steel was selected for these machines because it is recommended for all dyeing requirements, particularly where wool dyeing is to be done with acid colors.

The dye machine pumps furnish 3000 gallons of liquor per minute at 30 pounds pressure with an 80 foot head. The amount of liquor pumped through each package is five gallons per minute. This volume of flow has given very good results in terms of evenness of dyeing throughout the package of yarn.

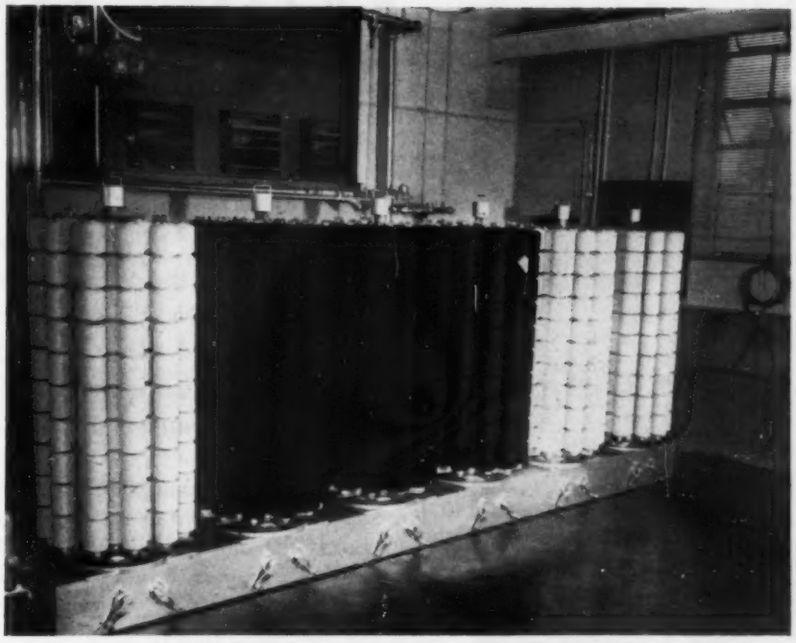
Approximately one third of each kier is jacketed from the bottom up. These jackets are connected with both steam and water lines which can be used to maintain a constant temperature by circulating steam through the jacket, or to help cool the unit by circulating water for low temperature vat and naphthol dyeing.

A by-pass valve is provided on each unit to reduce the volume of liquor flow by 50 per cent if desired. One kier in each unit is provided with valves so that the other kier can be shut off and one carrier of yarn can be dyed to fill small orders. The four-way valve is operated automatically from a control panel which changes the flow of the dye liquor from inside out or outside in.

To reverse the flow of liquor, the pump stops, the valve changes its position, and the pump is started again, all by automatic controls. An Allis-Chalmers automatic starter is tied in with this operation, and the length of time required for the change of flow can be varied by setting the flow control mechanism on the panel which is adjustable for an operation cycle of one to ten minutes duration.

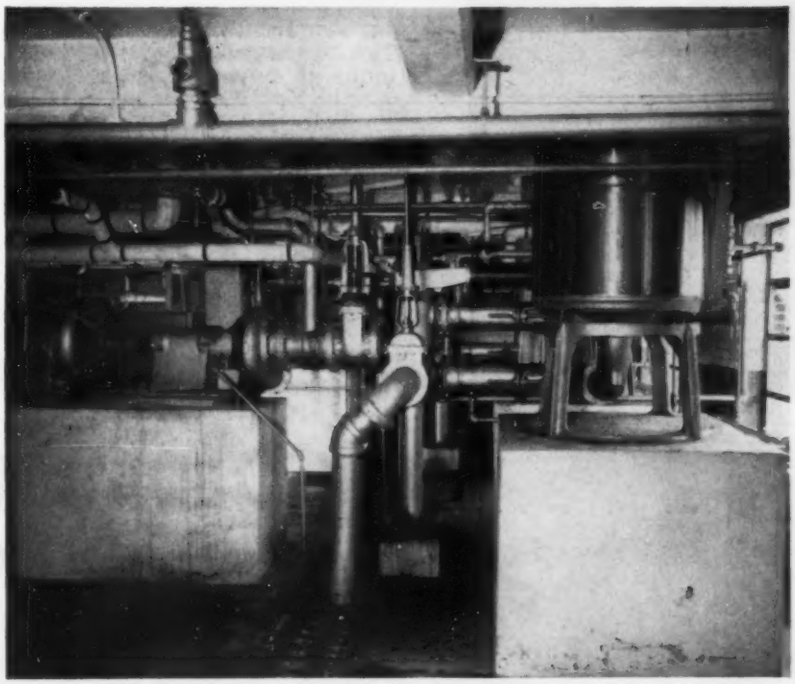
The Foxboro control panel contains the flow control mechanism, a temperature recording chart, and two pressure gauges which indicate the pressure for inside and outside flow. The recording chart can be set to a predetermined temperature and time that this temperature is to be maintained. Panel lights show when the control panel is in operation, and indicator lights show the direction of flow of the liquor. There is a control switch that can be used to cut the motor on or off. Another switch is provided for automatic or manual control of the motor and four-way valve.

All valve control stems for the four-way valve, drain valve, steam, steam and water jacket circulation, and by-pass valve extend up

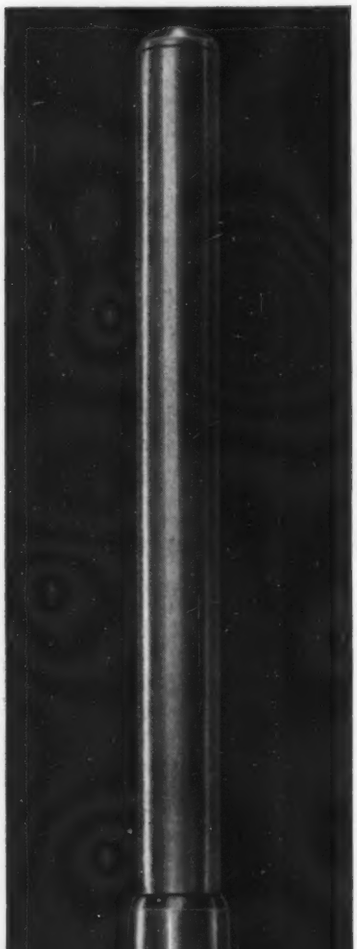


A line of six drier ports with six carriers of yarn. The recorder mounted on the wall at extreme right is for temperature. A unit heater can be seen above the carriers; it has an outside air intake and can be converted into a blower fan for summer use.

A side view showing lower portion of a kier with pump and motor for circulating liquor through packages. Jacket around kier bottom is provided for low pressure steam to aid in maintaining the desired temperature uniformly. Cold water can be circulated through the jacket to help maintain low temperature for naphthols and cold dyeing vat colors.



AT LAST A MODERN SPINDLE



Designed throughout to promote the most *modern* conditions, the Saco-Lowell New Era Spindle, with New Departure precision ball bearings developed specifically for the purpose, offers a most impressive list of operating advantages.

Spindle blade is stationary and the yarn carrier, supported on two New Departure ball bearings, is the only revolving member.

Power requirements reduced 25% or more and tape life increased nearly 300%.

Under normal conditions, adjusting, repair or replacement of parts is never required. New Departure ball bearings show no perceptible wear after 30,000 hours' operation.

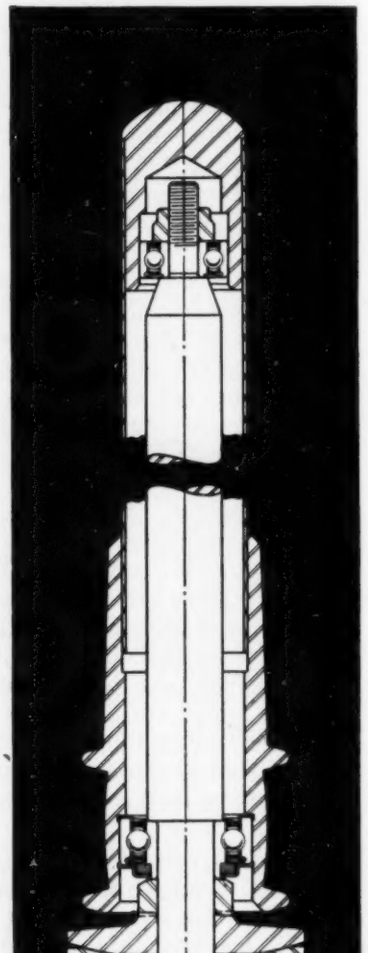
No oil used. Self-enclosed ball bearings are grease lubricated for at least 18,000 to 30,000 hours on a three-shift basis.

New Departure ball bearings provide ample load capacity at high speeds – with no oil throwing – no oil soaked yarn – no oil and lint mixture coating the spindle rail.

Spindle design saves hours of work installing and maintaining accuracy of spindle adjustment.

Performance proved by over five years mill operation and 750,000 spindles before released in unrestricted quantities.

Made for new frames or replacement in old, giving the most *modern* ball bearing advantages in both.



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66

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through the floor and are conveniently located to the dye machine kiers. A compressor supplies air at 60 pounds pressure for the Foxboro control panel and for the air cylinder which operates the four way valve on the dye machine.

The dyeing machine kiers are set on concrete bases which were poured on the ground floor, and the kiers extend through the openings to a convenient level on the mezzanine. The mezzanine floor is 8′4″ above the ground floor, thus ample ceiling height permits working on pumps, changing valves, or other repair work. There is plenty of space for loading and unloading yarn carriers. The space under the mezzanine is well ventilated and receives sufficient light from windows located at the rear of the building.

All of the other equipment, including the Permutit water softeners, an insulated 1000-gallon capacity Cole stainless steel lined hot water storage tank, return condensate pump, extractor and dryer, fans, and motors, Westinghouse Precipitron unit, and air compressor pump, is located on the ground floor. The dyeing machine pumps, motors, and Allis-Chalmers automatic starters for the dye machine pump motors are also on the ground floor.

Precipitron Air Cleaner. The Westinghouse Precipitron unit was installed to clean the air required by the blower type dryer. The dryer fan pulls the air through the electrically charged plates which remove all dust or foreign particles. The air that is pulled through the Precipitron unit is blown through a unit heater which is a part of the dryer system. The port openings for the yarn carriers are on the mezzanine floor.

In drying, the heated air is forced through the yarn on the perforated carriers. The air used in this operation is cleaned to prevent dust or foreign particles from reaching the yarn carriers where it could restrict the passage of air and also cause soiled work.

The dryer temperature can be regulated from 160 degrees F to 240 degrees F. The Foxboro instrument panel for recording the dryer temperature is located on the mezzanine floor. The dryer fan has a capacity of 3000 cfm at 3520 rpm, receiving its power from a 100 hp direct drive motor. The average time required for drying is six hours per 1800 pounds of yarn, and there has been no evidence of dirty yarn on the inside of the packages.

The vacuum type extractor consists of a tank and suction fan connected to a 50 hp motor. The extractor develops a seven-foot vacuum and will reduce the moisture content of the yarn from 70 to 80 per cent in approximately 30 minutes. The carriers are constructed to accommodate 1⅝-inch diameter perforated tubes. Carriers for ⅝-inch tubes can be used if desired.

An automatic steam condensate pump and tank on the ground floor serves to collect steam and condensate from the heating and drying system and returns it to the hot water feed tank in the boiler room.

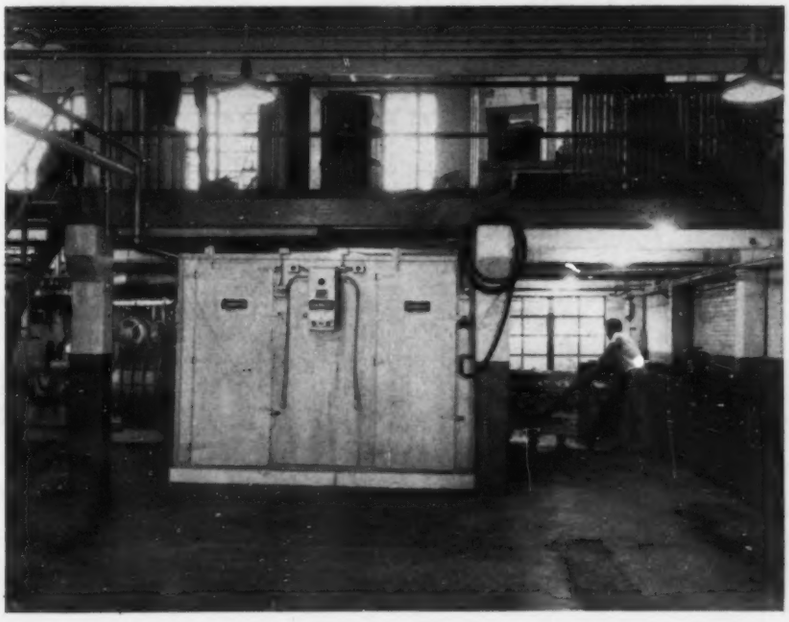
Water Supply. Water is supplied by the city of Talladega, and it is filtered at the mill. An analysis of the water showed approximately 40 ppm or 2½ grains of hardness. As a precaution, two Permutit water softeners were installed. These units have a capacity of 30,000 gallons each before regeneration is necessary, and they can supply 84 gallons of water per minute.

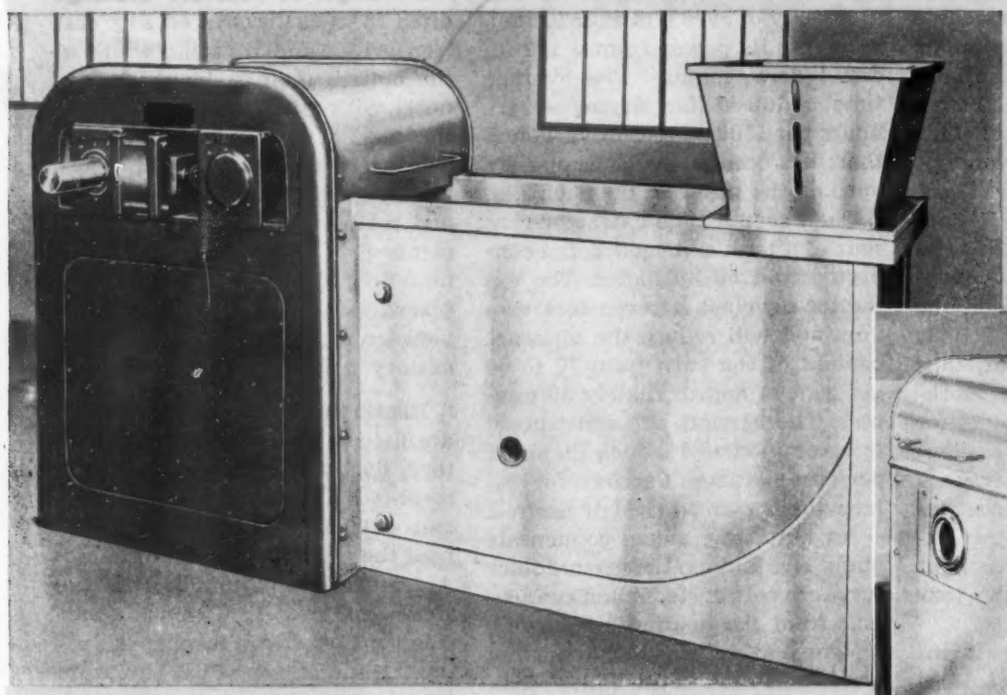
Drainage. A concrete drainage ditch 18″ x 18″ is covered with cast iron grilles and runs the width of the bottom floor. This ditch connects with a 12″ disposal pipe at the outside wall of the building. The extractor ports, dryer ports, platform scales, all control panels, and temperature recording instruments are located on the mezzanine floor. The control panels are placed so that they are in full view from the glass paneled laboratory and office.

Heating System. Steam radiators are used to heat the office, laboratory, dye storage room, and basement. A combination unit heater and outside ventilator is used to heat the main part of the top floor. A feature of this unit is that the steam can be cut off and the outside ventilators can be opened during the summer months. The drum type fans are used to draw in fresh outside air during warm weather.

A 42-inch exhaust fan is used for additional air circulation and removal of fog or fumes. There is practically no fog in the dye room on cold days, and the unit heater circulates a sufficient volume of warm air across the dyeing machines to dispel the cool air which would otherwise produce condensation over the dye machines and expansion tanks.

View of the interior, showing the arrangement of the ground level floor and the mezzanine. The Westinghouse Precipitron unit in the center cleans the supply of air used in drying packages of yarn.





Side view of the new Butterworth Horizontal Rope Saturator. Note streamlined, compact design and stainless steel closures.

Front view of the new Butterworth Rope Squeezer. Frame work, bearings, rolls, air cylinders and control mechanism are interchangeable with Saturator shown at left.

Simplified High-Speed Bleaching

With the new Butterworth Horizontal Rope Saturator and the new Butterworth Rope Squeezer you can achieve higher speeds, better bleaching and better handling of goods during continuous bleaching operations. These new machines are more flexible, more interchangeable than any conventional saturators and squeezers now in use. There's no loss of production time.

Actual production tests have shown savings of 40 per cent in labor costs alone; 25 per cent less floor space used. Production speeds as high as 300 yards per minute can be obtained with this equipment.

Check some of the features and advantages of these new machines: faster operating speeds, streamlined design, closures made of stainless steel; rollers completely enclosed to protect workers and keep dirt out; compact, easy to reach controls, gentler handling of goods, 3-position poteye panels, plus many additional features.

The new Butterworth Horizontal Rope Saturator and the new Butterworth Rope Squeezer are two major steps in standardizing and simplifying continuous bleaching operations. If you want to standardize continuous bleaching operations, if you want to obtain better bleaching results and greater production, then get all the details on these two new machines now. Write or call:

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Materials Handling. A one-ton capacity electric chain hoist is mounted on a trolley which travels on an "I" beam track. This hoist is used to raise and lower the yarn carriers through a hole in the mezzanine floor. The carriers can be moved to the floor scales where the yarn is weighed. Then the carrier is transferred to a cable electric hoist suspended from a trolley.

A cable hoist is suspended from parallel "I" beams which travel on trolleys across the room. This hoist arrangement is utilized in loading and unloading the dye machine kiers and for moving the carriers to the extractor ports and dryer ports.

Laboratory. A laboratory for color matching and checking samples is located adjacent to the office on the mezzanine floor. The laboratory equipment includes an eight-hole electrically heated glycerine bath for skein dyeing. A new sample-package dyeing machine has been installed in the laboratory which contains all of the analytical equipment necessary for checking dyed work. All cabinets in the laboratory are of all metal construction with enameled finish.

The new stainless steel sample-package dyeing machine may be seen in this view of Wehadkee's small, well equipped laboratory.

Lighting. The moisture-proof lighting fixtures are of the standard dome reflector type with porcelain enameled reflectors; these are located over the dye machines and in some portions of the basement.

The complete plant is compact and well ventilated with sufficient exhaust and blow fans for good air circulation and removal of fumes and fog. Proper drainage on both floors is adequate to maintain dry floors for comfort and safety. The equipment is placed to require a minimum of physical labor, and the dye weighing room is close enough to the dye machines to minimize the time required for weighing and mixing the dyestuff. The automatic control features allow ample time for the operator to take care of the sequence of operations without rushing.

Thread Institute Opposed to Tolerance Changes

Government efforts to narrow allowable tolerances in thread weights and yardages from the current standard of five per cent to three per cent will be vigorously contested by the thread industry, according to David Snyder, executive director of The Thread Institute, Inc. The measure will be discussed at the 34th National Conference of Weights and Measures in Washington, May 24-27. Weights and measures spokesmen of the National Bureau of Standards are expected to recommend at this time, the enactment of legislation by the various states which will establish the new low limit as a basis for delivery of contract sales.

Mr. Snyder, citing present accepted ASTM standards specifying allowable tolerances of five per cent for threads, points out that past experience reveals the proposed three per cent figure to be unworkable. There are sufficient errors introduced by sampling techniques, test equipment differences, personnel variations, uncontrollable manufacturing conditions, and atmospheric deviations during test and manufacture to cause technicians to recognize the fallability of creating a too rigid limit. Furthermore, tolerances would vary from fiber to fiber, particularly in synthetics characterized by a high degree of elasticity, and make the situation even more confusing.

Mr. Snyder stated that thread manufacturers are agreed, however, that though the five per cent limit is a fair basis for acceptance, price adjustments should be forthcoming if deliveries are consistently below or above weight as determined by accurate test.

The case of the thread manufacturers will be presented before the Conference Committee of Methods of Sales of Commodities.

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The buyers' frantic search for goods in short supply is over! Now, more than ever, it is time to use creative talents again.

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So, consider the characteristics in Fiberglas* yarns. Improved techniques have made them more versatile than ever before. For example, Coronizing the greige goods, which anneals, relaxes and crimps the yarn, imparts performance features never thought possible with glass fibers. Here are positive values that lend themselves to the creation of many end products with new selling punch. Here is opportunity for the taking.

Owens-Corning Fiberglas welcomes, as always, the opportunity to work with you in your mills—or through our textile laboratory where men, skilled in the art of making better products through research, are at your service—on a confidential basis of course. Write or 'phone Owens-Corning Fiberglas Corporation, Textile Products Division, 16 East 56th Street, New York 22, N. Y.

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Bales of wool are tiered in storage by a 3000-lb capacity gas-powered fork-truck. The 1100-lb bales are handled two and three at a time. The old method of unloading and setting the bales on end in storage took six to eight men. The same storage space now holds five times the number of bales because the bales are tiered five high.

Photos courtesy, Clark Equipment Co.

North Carolina Woolen Mill Shows How

Fork - Trucks Cut Handling Costs

By W. J. LAWRENCE

EXCLUSIVE

Transportation of materials and supplies between mill departments by fork-trucks results in savings in labor, time, and storage space.

THE WOOLEN industry is hampered by having approximately 20% of the employees engaged in some phase of handling materials. Gasoline-powered fork-trucks have helped solve the problem by reducing the labor requirements at the Chatham Manufacturing Company, at Elkin, N. C.

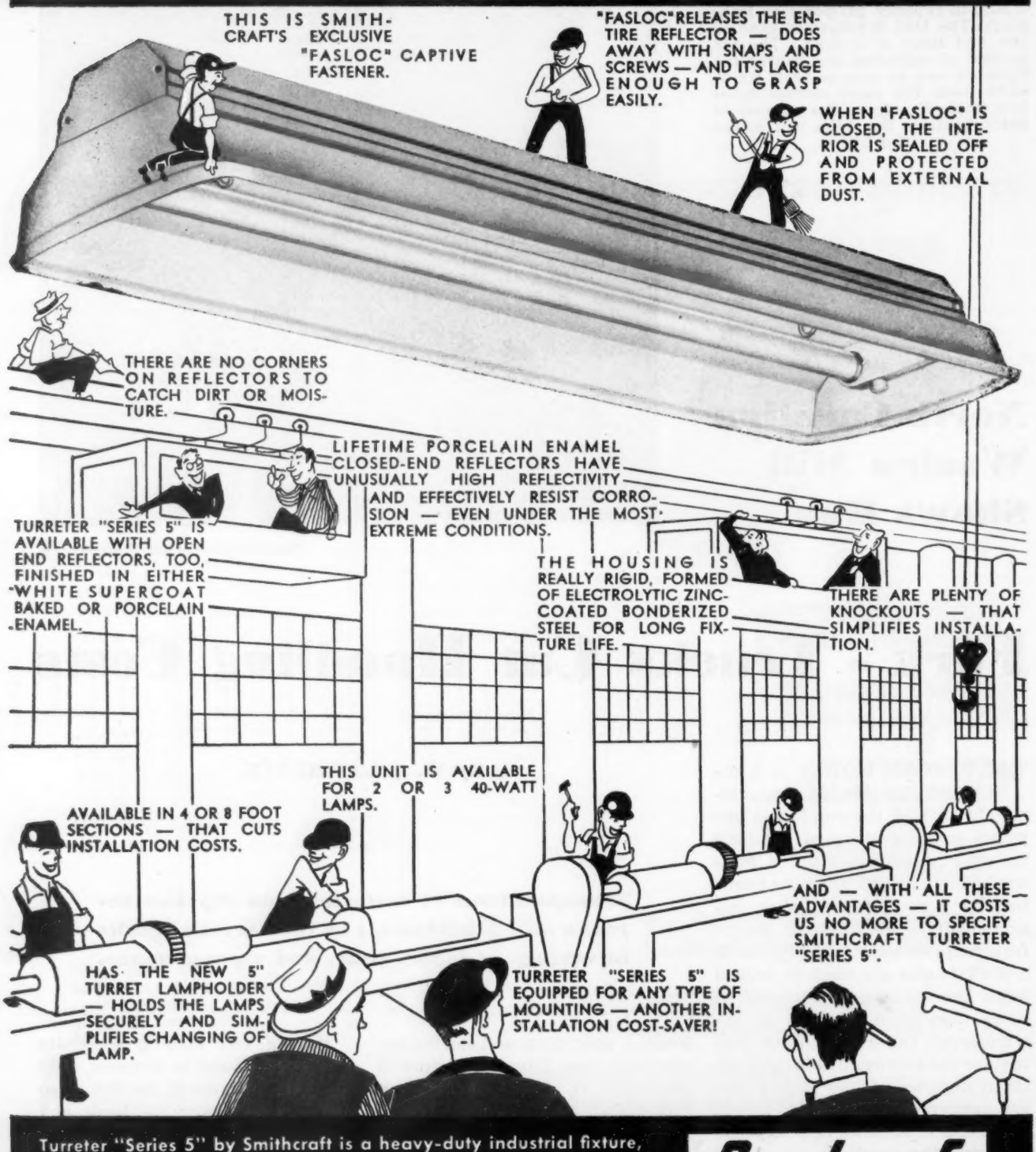
Fork-trucks are used to unload bales from railroad cars, and to carry bags from the cars to the warehouse. Other operations that require the movement of materials for a distance of 200 to 300 feet are performed in a shorter length of time, and at much less expense by using the trucks.

These trucks have also been used to great advantage in handling barrels of soap, acid, soda ash, starch, and materials packed in cartons. Older methods required the use of several men to perform loading, unloading, and storing operations. Less labor and time is needed to do the same job when fork-trucks are used.

Special attachments may be installed on fork-trucks for use in special operations. A scoop attachment can be procured for use in handling salt, or other bulky, loose material used in woolen mills. It can also be used to move bricks, lumber, and other materials.

Moving and loading schedules have been found to increase efficiency in operating the trucks so that they may carry full loads, and no time is lost between loads. When goods are to be moved more than 300 feet, several trailers can be attached to one truck in order to transport a large amount of goods at one time. This is further facilitated by well planned schedules.

this is the sensational NEW Smithcraft TURRETER "Series 5"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THERE ARE PLENTY OF KNOCKOUTS — THAT SIMPLIFIES INSTALLATION.
THIS UNIT IS AVAILABLE FOR 2 OR 3 40-WATT LAMPS.
AVAILABLE IN 4 OR 8 FOOT SECTIONS — THAT CUTS INSTALLATION COSTS.
AND — WITH ALL THESE ADVANTAGES — IT COSTS US NO MORE TO SPECIFY SMITHCRAFT TURRETER "SERIES 5".
HAS THE NEW 5" TURRET LAMPHOLDER — HOLDS THE LAMPS SECURELY AND SIMPLIFIES CHANGING OF LAMP.
TURRETER "SERIES 5" IS EQUIPPED FOR ANY TYPE OF MOUNTING — ANOTHER INSTALLATION COST-SAVER!

Turreter "Series 5" by Smithcraft is a heavy-duty industrial fixture, designed specifically to meet the most exacting industrial requirements. Low initial cost, simplified maintenance and installation, comfortable cut-off from lamp glare, high construction standards . . . these and many other exclusive Smithcraft fixtures are important reasons for specifying the Turreter "Series 5" — by Smithcraft, manufacturer of America's finest fluorescent fixtures.

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LIGHTING DIVISION
CHELSEA 50, MASSACHUSETTS

Blended wool is stored temporarily on the second floor at Chatham. A 1000-lb capacity gas-powered fork-truck lifts the bales, two at a time, from the dyeing process and carries them to an elevator. The fork-truck and load are lifted to the second floor by the elevator.

A 2000-lb capacity fork-truck, equipped with full chisel forks, handles boxes of blankets, tiering them and taking them from the tier for loading. The boxes are easily handled without pallets by an experienced driver. Tiering in the warehouse saves storage space, and the elimination of pallets gives added economy.

Stacking operations for all types of bales, boxes, bags, etc., can be performed by the fork-truck. Storage space may be efficiently utilized by stacking the goods to a total height of fifteen feet by using the fork-lift.

In some instances it may be found desirable to use pallets, in order to avoid possible damage to goods due to soiling when they are moved by the truck. When pallets are used, the forks do not come in direct contact with the goods, thereby eliminating the possibility of damage or soiling them. Multiple pallets may be used where it is desired to prevent goods from being in contact with other dissimilar materials stored in the same stack, or pile. This is another aid in effective utilization of warehouse, or dead-storage space.

When pallets are used, a crew of men may be used to load or stack one pallet while the truck is carrying another one away to the storage room. Pallets should be properly designed for whatever type of materials they are to be used for.

Heavy materials may be moved more safely by using fork-lift trucks, thus eliminating possible injury to operatives who may attempt to lift heavy bales and other items by hand. It is also possible to eliminate the labor cost of from four to six men when heavy bales and boxes are being moved. The cost of operating a gasoline-powered fork-truck is comparatively small when the amount of labor saved is considered.

Safety racks should be installed on the trucks to provide the driver with protection against bales which might accidentally fall, or in case the truck is overturned. Good ramps, level floors, and platforms are desirable for safe operation of the trucks. Ample clearance should be provided for all passages to be used by the trucks, and it is necessary to observe that slightly more space is needed for fork-trucks than is needed for hand-trucks.

Standardized Soiled Fabric for Testing

A standardized soiled fabric has been developed by United States Testing Company, Inc., which is said to meet every requirement for detergency tests on both cotton and wool fabrics.

The fabrics are soiled by immersion in a solution of mineral and vegetable oils in which colloidal carbon black is suspended. The concentration of the soiling solution is so adjusted that the final reflectance of the fabric is 25% ± 2.0%. At this reflectance level the oil content of the cotton fabric is approximately 1.0 gram per square yard, and that of the wool fabric 1.5 grams per square yard.

After soiling, the fabrics are heat-treated to accelerate the ageing process which becomes complete in about six weeks. The average reflectance of each batch of fabric is then accurately determined and the light and dark areas, if any, are separated.

If stored in a dust-free atmosphere at room temperature and not in direct sunlight, the fabrics are said to remain constant in their performance over many months.

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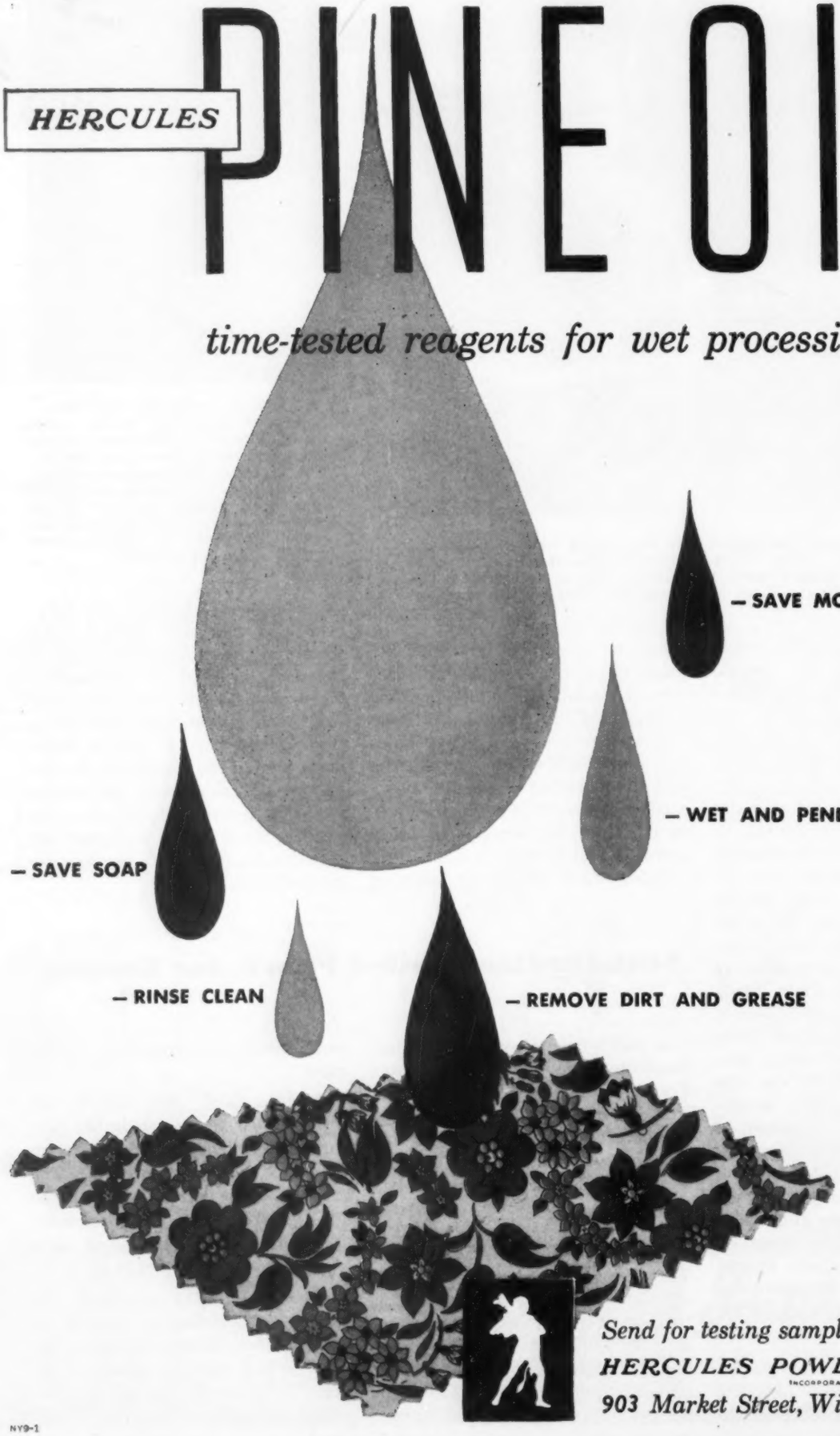

Send for testing sample to
HERCULES POWDER COMPANY
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NY9-1

Georgia Mill Men Compare
Picking and Carding Practices

Staff Report

GEORGIA textile operating executives,* meeting in Atlanta on March 19, indicated a difference of opinion in answering questions on the merits of one-shot lubrication systems on pickers.

One mill** reported saving approximately $800 per year on labor alone as a result of using a one-shot system on the pickers. This mill formerly overhauled the calender section every three months, but during three years of service with the one-shot lubrication systems the pickers have not been overhauled. Another mill reported no difference in the cycle of overhauling as a result of using the one-shot lubrication system.

According to a report, there will be an excessive amount of oil at some points where bearings are worn; otherwise the distribution of oil is uniform. The frequency of lubrication in one plant is two shots for 160 hours on small ball bearings and five shots for the same period on large ball bearings. Plain bearings are greased manually with from two to five shots every 80 hours. The majority of mills reporting had no experience with one-shot lubrication systems on pickers.

Continuous Strippers. Several mills have delegated the job of maintaining continuous strippers to the card grinder who inspects them when the cards are ground. Others check the strippers every six weeks to three months of operation, and usually one man is assigned the responsibility of taking care of the strippers. Regular oiling and preventing belt slippage are two items that are stressed for proper operation of the strippers.

The life of needle bars ranged from 3,840 operating hours to two years among those mills reporting on continuous strippers. Continuous strippers do not cause loose card clothing, according to 90 per cent of the mills answering the question.

SUGGESTIONS FOR PREVENTING "SNOWBALLS"

1. Close lap guide on 40-inch cards to 37½ inches.
2. Change back cylinder screen from 34 to 17 gauge setting.
3. Set stripper plate close to selvage.
4. Keep needles in good condition.
5. Adjust stripper traverse.
6. Keep card clothing sharp near edge of cylinder.
7. Replace needles when first four to eight needles show wear.
8. Check alignment of stripper.
9. Look for bad clothing wire.

Most mills wait until the needles are broken, bent, or worn enough to cause streaky webs and bad work before replacing the needle bar. Those who replaced individual needles in the bars stated that they felt it was an advantage to do the work in the mill shop, but only four plants were following this practice.

Stripping Cycles. Where continuous strippers were used, production before stripping doffer ranged between 118 and 600 pounds; before stripping cylinder, between 456 and 3,360 pounds. Production before grinding varied among the mills from 1,215 pounds to 30,000 pounds.

Seven reports indicated that more uniform card sliver was produced when continuous strippers were used. Four answers stated that no difference was discernible in the card sliver although most of those reporting stated that flat strips were of lower quality and contained more trash.

Production can be increased and nep counts can be lowered slightly by using continuous strippers, according to six out of nine mills reporting on the subject. Three plants recognized no significant difference.

Traverse Grinders on Flats. The use of traverse grinders on flats proved to be a controversal subject. One experience was related wherein it took longer to grind the flats with the traverse grinder than with a drum grinder. This kept the cards out of production for a longer period of time, and the traverse grinder did not do an even job. It was explained that the roller starts grinding on one side of the flats and before it reaches the other side, that flat has moved out of the path of the roller thereby resulting in a diagonally ground flat.

One mill man preferred using drum grinders for flats because he felt that the expense involved in getting additional equipment for traverse grinding the flats would offset the benefits derived.

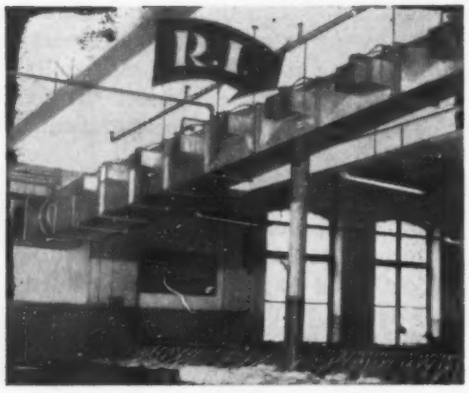
An experiment was conducted whereby a set of old flats was ground 16 hours per day for three months. A traverse grinder was used for the experiment, and when the wire was ground down almost

*Report of semi-annual meeting of Textile Operating Executives of Georgia, held at Georgia Institute of Technology. Prior to the meeting, mills had answered questions; these answers were placed in pamphlet form for the convenience of members of the association. This is the first installment of a report which is based on both written answers and oral discussion.

**Thirty-three mills participated in the written survey of practices; this represents 1,559,092 spindles and 26,988 looms.

Wind & Water
IN CORRECT PROPORTIONS

means smooth sailing for textiles too—



Clean air is circulated through these ducts. Over each outlet a RIHCO Atomizer moistens and cools the escaping air. This patented RIHCO Atomizer internally mixes a separate air supply with a fine jet of water. This mixture emerges to normal atmospheric pressure with an explosive expansion that completely vaporizes the water. Evaporation lowers the temperature. Predetermined quantities of outside air are introduced as required to maintain a uniform blanket of cool, moist air over the entire room. Automatic controls economically hold an exact humidity while temperatures are reduced to a reasonable level.

Enjoy perfect weather, Skipper! RIHCO Humidifying Systems keep production under full sail by mixing the correct amount of moisture with circulating air. Mills equipped with RIHCO systems maintain an optimum humidity while room temperatures are reduced to the right degree for labor efficiency and comfort. The RIHCO principle of humidification and evaporative cooling permits the use of smaller air compressor units, thus reducing installation and power costs. No matter what your textile process may be, you'll be setting the right course when you consult with a RIHCO engineer. Why not write us today?

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to the knees, a check was made to determine the results. The findings indicated that the wire was ground true and even. The management in this plant is grinding another set of flats in the same manner to further substantiate the findings.

In one instance a single traverse grinder was used to service 73 cards. The report on this grinder showed that the management was well pleased with the work and stated that it will sharpen the flats more uniformly and with less wear.

Clothing Cards. The reports show that two out of three mills destretch card clothing before making the final draw. The first draw is allowed to stand from 4 to 24 hours, and the amount of stretch varies from 2 to 24 inches. The amount of pull exerted on 3-

BEATER TYPES AND SPEEDS

Mill No.	Breaker Beater	Speed rpm	Fan rpm	Inter. Beater	Speed rpm	Fan rpm	Finisher Beater	Speed rpm	Fan rpm	Lap Wt. oz/yd	Staple Cotton	Grade Cotton
A	3-blade	1050					Kirschner	900		14	1 1/32	60% SM 40% M
B	2-blade	1300	1416				Kirschner	1286	1416	13.67	1-1 1/32	M
C	3-blade	700	1100	2-blade	985	985	Kirschner	1025	1280	14	1 1/32	SLM
D	Buckley	600	850				Kirschner	1050	1200		7/8	M
E	Buckley	1050	1400	Kirschner	1060	1400	Kirschner	1070	1400	14.5	7/8-1 1/16	
F	2-blade	1270	1298				Kirschner	1270	1208	13.07	1-1/16	LM
G	Aldrich	1200	1265	2-blade	1000	1100	Kirschner	1100	1210	12.5	1 1/8-1 1/2	
H	2-blade	784	1600				Kirschner	1030	1030	14	1 1/32	M
I	2-blade	1150	1100	2-blade	1000	1050	Kirschner	850	1000	15.3	1	M
J	2 & 3-blade	1130 &1125	1160				Kirschner	1088	1384	16.32	1	M
K	Aldrich	1115	1429	Aldrich	1053	1235	Kirschner	1022	1515	16		SLM
L	2-blade	1150	1250				Kirschner	900	1100	16		
M	Kirschner	838	1335				Kirschner	927	1458	14		M
N	2-blade	1000					3-blade	500				
O	Aldrich	940	1250	Aldrich	1000	1400	2-blade	950	1450	14	1 1/16	SLM
P	Buckley	765	1000	Kirschner	1080	1000	Kirschner	1180	1000	15		M
R	2-blade	1100	950	Kirschner	1100	1000	Kirschner	1100	1100	15.42	1	M
S	2-blade	1240	1100	3-blade	1140	1100	Porcupine	490	1100			
T	3-blade	1000	1450				Kirschner	1150	1450	15		
U	3-blade	1175	1175				Kirschner	1400	1400	15.5		
V	Buckley	1500	1300	Kirschner	1500	1300	Kirschner	1170	1300	14		SGM
W	Buckley	480	780	Kirschner	872	1420	Kirschner	1048	1428	14	7/8-1 1/8	LM&SM
Y	Kirschner	1160	1490				Kirschner	1160	1330	14	7/8-1	
Z	3-blade	1090	1345				Kirschner	1080	1600	15.15	7/8-1 7/16	
AA	Aldrich	1062	1386				Kirschner	956	1254	14.6	1	M
AA	Aldrich	756	1208	3-blade	1168	1359	Kirschner	990	1292	14.6	1	M
BB	2-blade	1400	900	2-blade	1400	900	Kirschner	1100	900	14	1	M
CC				Buckley	540	940	Kirschner	1000	1130	16	1 1/32	50% M 50% SL
DD	3-blade	1100		2-blade	1150		Kirschner	1225		15	1	
EE	2-blade	1180	1200				Kirschner	1180	1200	14.5	1 1/32	
FF	3-blade	1010	1440	2-blade	995	1455	Kirschner	950	1400	14	1	M
GG	3-blade	998	1200				Kirschner	1072	1240		1	M
HH	Buckley	1150	1200				Kirschner	1100	1200	13	1	M
II	2-blade	1250	1400	2-blade	1250	1250	2-blade	1250	1150		1 1/16	
JJ	2-blade	1235	1520	2-blade	1235	1520	Kirschner	1044	1392	17	7/8	SM&SLM
JJ	3-blade	1060	1060	2-blade	1272	1113	Kirschner	1057	1301	17	7/8	SM&SLM
KK	Porcupine	1020	1270	2-blade	1210	1120	Kirschner	1335	1475	14		M

Leading printers use
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because they

Cut out 3 operations

One of the outstanding advantages of Aridye® Pigment Colors is that they require no after-treatment to develop the final shade.

This means that for single-color work and multi-color patterns which can be printed with Aridye Pigment Colors alone, you can eliminate all ageing or steaming and soaping operations and cut out one drying process. After printing, the fabric is merely dried and then heat treated on an enclosed tenter or other suitable equipment.

The savings in steam, chemicals and time can easily be calculated. In addition, the troubles frequently encountered in ageing are entirely avoided. Cutting out three operations speeds up production and allows quicker deliveries. An Interchemical technical representative will be glad to discuss with you in detail the many ways in which Aridye Pigment Colors can be of benefit to *you*.

CHECK THESE OTHER ADVANTAGES:

Colors as printed are final in shade
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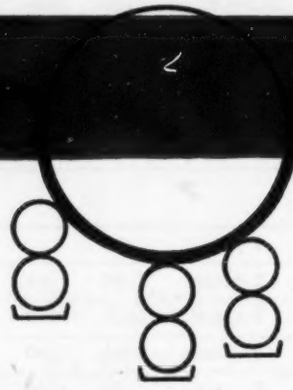
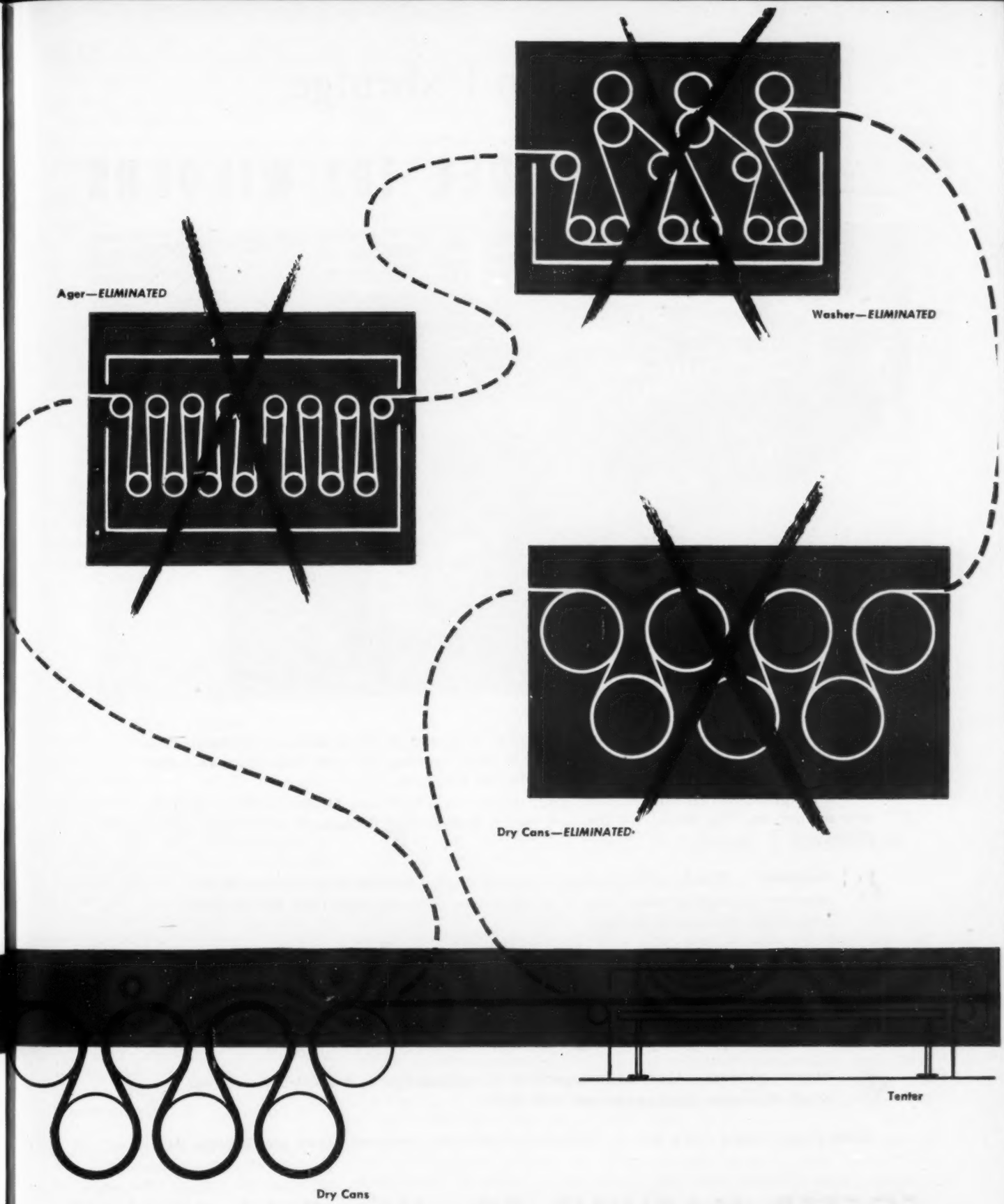
Bright colors
Ease of application
No impairment of hand
Can be used in combination with ordinary dyes



Printing Machine



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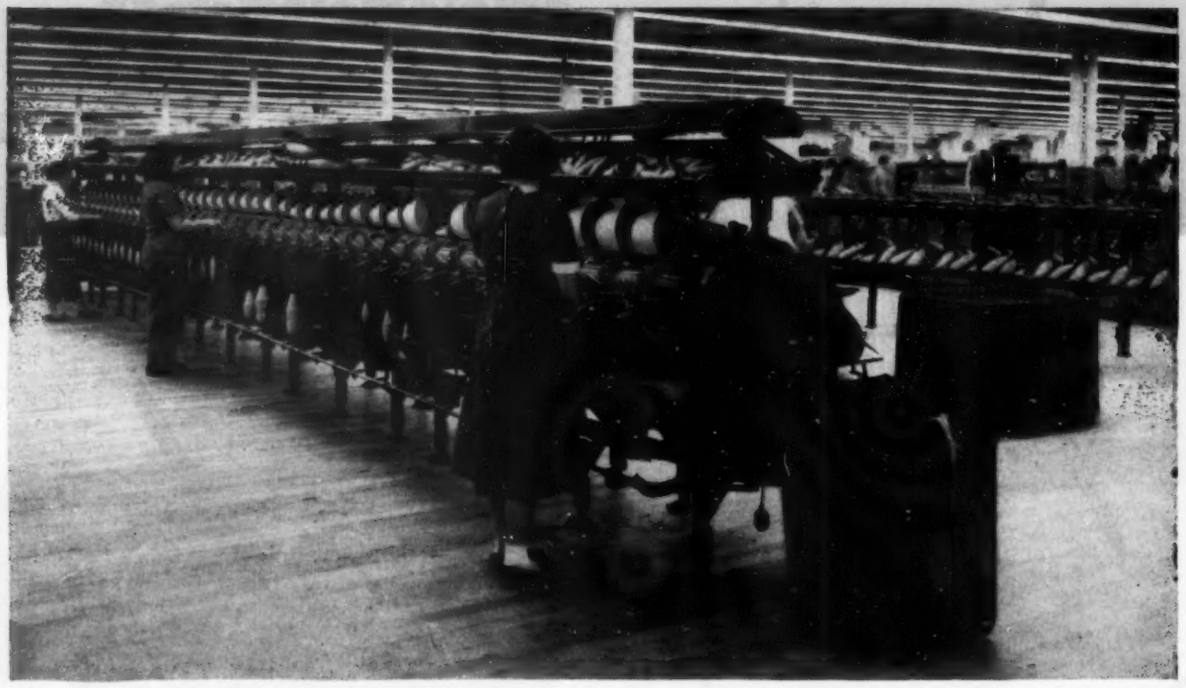

After one of the most dramatic modernization programs in textile history, the Bachmann-Uxbridge Worsted Corp. of Uxbridge, Mass. is today running full time, whereas many other woolen mills are shut down or on sharply curtailed schedules.

It is significant that this mill, like many others, included Foster Model 102 Winders in its new equipment. The Model 102 features, which undoubtedly influenced its decision, are as follows:—

1. **FLEXIBILITY** — Will handle any count or type of staple yarn with same traverse mechanism — any angle of wind from 9° to 18° — any ordinary taper. Can be equipped to produce any type of package.

2. **INCREASED PRODUCTION** — Twice that of obsolete models. Winding speeds up to 700 y.p.m.

3. **ECONOMY** — Operating cost 1/3 less than that of obsolete models. Repair costs as low as $3.50 per year per 100 spindle machine.

4. **QUALITY PRODUCT** — Automatic inspection. Conditioned yarn, if desired. No ribbon wind. Minimum breakage on soft twist yarns.

Make Foster Model 102 a part of YOUR modernization program. Send for Bulletin A-95.

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ply clothing for stretch ranged from 225 to 400 pounds. The final draw on 3-ply clothing was from 375 to 400 pounds.

The amount of pull exerted on 4-ply clothing for stretch was from 250 to 400 pounds, and the final draw varied from 300 to 450 pounds.

Twenty-eight mills indicated a preference to clothe cards from the back. Reasons given for the preference are as follows:

1. More convenient.
2. More economical.
3. Job can be done faster.
4. Saves labor.
5. Operative is closer to the work.
6. The pull is not exerted against the point of the wire.

Only three plants answering the question revealed that they clothed cards from the front as a regular practice. Some advantages cited for this practice are as follows:

1. No tendency for tension shoe to lift wire and make it uneven.
2. Prevents bending knee of fillet.
3. Easier to prepare cylinder for reclothing from front.

In several instances reclothing was done from the front when it was necessary to reclothe the doffer, make repairs on the doffer, or remove the doffer for other reasons. One report indicated that reclothing was done from the front if the spacing between cards permitted working from the front without presenting a handicap to the operative.

Surface Grinding Cylinders. Less than half the mills reported grinding the surface of card cylinders before applying new clothing. The tolerance for grinding was considered satisfactory within zero to .004-inch limits among the plants engaged in this practice.

Re-Covering Grinding Rolls. It was the concensus that No. 40 fillet gives best results for covering grinding rolls to be used on 100s cylinder wire and 110s doffer wire. In a few instances No. 7 grit was recommended, and No. 30 was used occasionally; however these exceptions were definitely in the minority.

Drum grinders are re-covered after 80 hours to one year of service. Traverse grinders are re-covered after 40 hours to 200 hours of service. There was no consistency among those mills reporting on frequency of replacing grinder fillet, and the difference may be attributed to individual mill practices, including cleaning the fillet while it is in service and different settings used for grinding.

Neps in Card Sliver. With one exception, it was the unanimous opinion of the mills answering the question that the nep count increases with the speed or rate of production at which the card is operated.

One mill reported that neps increased from 18 immediately after grinding to 36 after 504 hours of operation. Although there was some disagreement regarding how much effect grinding had on nep counts, it was generally agreed that the nep counts were reduced each time the cards were ground.

Test results in one instance revealed that the nep count increased about 5 per cent each half hour after stripping up to 3 hours of operation. During the fourth hour, the increase in neps jumped to about 10 per cent for each half hour of operation. This test was made on Strict Low Middling cotton.

Relatively little information was advanced regarding the effect of fiber properties on nep counts; however a test on Stoneville 2B, 1-inch cotton showed neps decreased from 33 in 56 per cent mature cotton of 3.1 fineness to 12 neps in 86 per cent mature cotton of 5.8 fineness. The results of this test agreed with other expressed opinions which were not substantiated by facts and figures. One written answer stated that cotton fiber and strength were the most important factors affecting nep counts. It was further stated that an improvement in cotton, although slight, is far more effective than anything that can be done to the card to reduce nep counts.

Although there was some difference of opinion, the majority of those who had conducted tests and studied the relation of flat speed to nep counts were convinced that slow flat speeds cause more neps.

The concensus regarding the relation of card settings to nep counts was that loose setting causes more neps.

(Continued next issue)

Heat - Setting Nylon Fabrics

Heat-setting* a nylon fabric causes a rearrangement and fixation of the internal molecular structure to stabilize it. It causes the fabric to retain, through continued use and laundering, the dimensions, shape, or form in which it was heat-set.

Nylon yarn will tend to contract when it is heat-set. As produced on shipping bobbins, it will contract 9 to 10 per cent in a boil-off in water and slightly more if it is treated at high temperatures such as are obtained with saturated steam under pressure. Some shrinkage is lost as the yarn is processed.

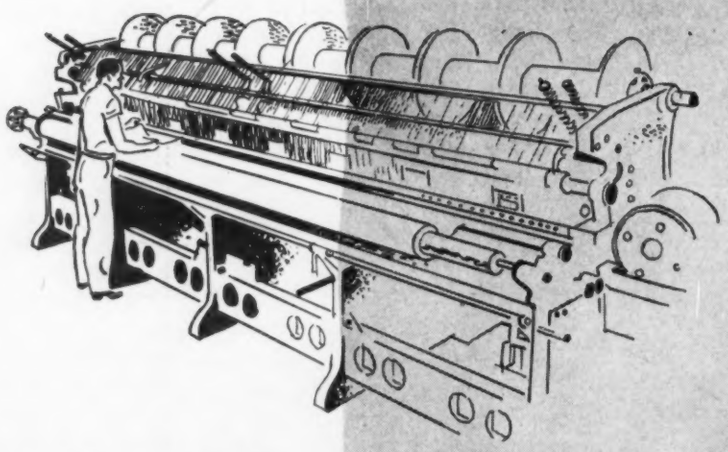
A different hand is imparted to the fabric by the hot-roll method than that obtained from steam or boiling water setting, the former being generally softer and fuller.

In tricot knitting, nylon fabrics treated by heat-setting give fine, stable jersey which holds its shape through wear and laundering.

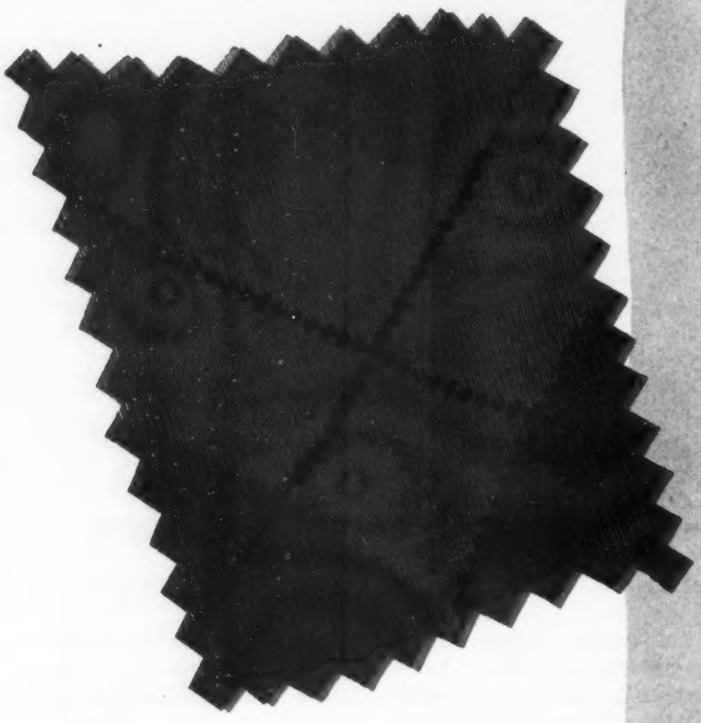
For laces and nets, hot air at temperatures of 380° to 450° F has been used on closed tenters, fabric being exposed for 30 to 90 seconds. The fabrics can be laundered or boiled-off without shrinking or pattern distortion.

Heat-setting reduces or eliminates the need for ironing some nylon lingerie and men's shirts.

* Abstract of address by A. W. Staudt, manager, nylon technical service, nylon division, DuPont Company, before New York Section of AATCC, March 4, 1949.



ALUMINUM IS LIGHT....ALUMINUM IS STRONG



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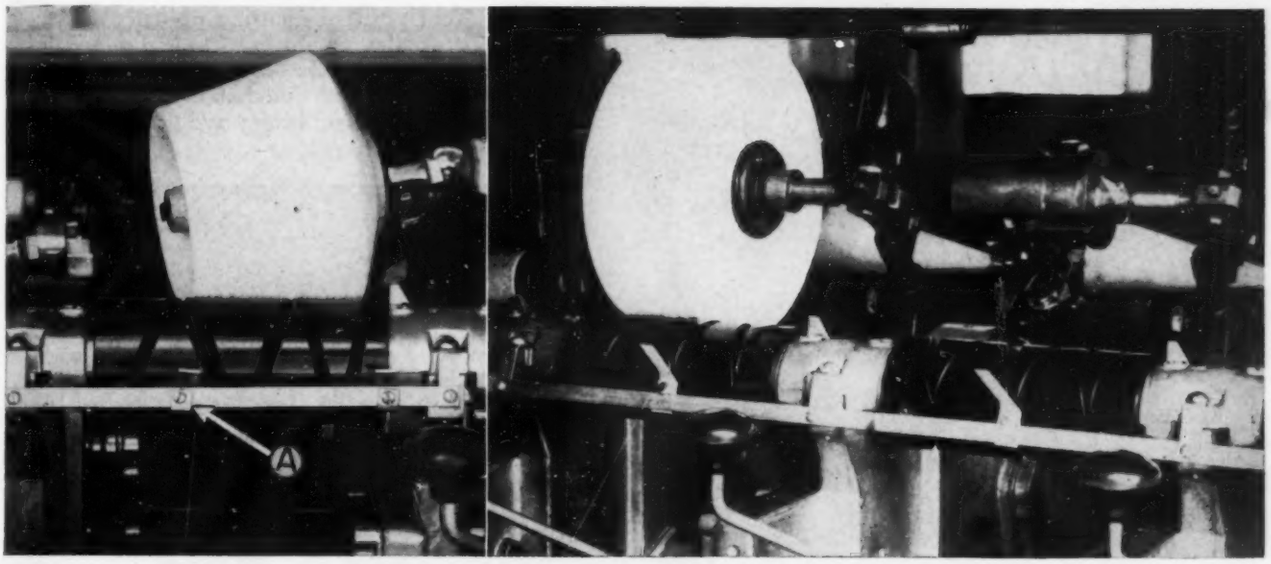

Fig. 119, at left, shows how short-traverse cones may be wound with standard traverses, by stopping the yarn at one of the groove intersections. Fig. 120, at right, shows short-traverse warping tube, or cheese, being wound on a standard traverse.

WINDING MACHINES —— Principles and Practices

Article 20

By JESSE W. STRIBLING
Universal Winding Co.

EXCLUSIVE

THIS ARTICLE continues the discussion of the Roto-Coner and tells how short-traverse packages can be wound with regular traverses; describes the automatic sizing attachment, for stopping the spindle when the predetermined diameter of package has been reached, and the use of anti-wrap drum brushes for preventing laps from forming around the drums.

THE STANDARD rotary traverses of the Roto-Coner can be used to wind packages of shorter length than the full traverse of the drum.

As was stated in a previous article, the rotary traverse, or drum, guides the yarn onto the package by means of an intersecting groove. When it is desired to wind a short-length package, the short traverse is obtained by stopping the yarn at one of the intersections. For example, Fig. 119 shows a short-traverse cone—frequently desirable, particularly on very fine yarns—being wound on the standard 2½-turn full-accelerated traverse, as used for standard knitting cones. In this case, the short traverse is obtained by using a stop (A) at the first intersection of the groove on the left. With the stop, or finger, in the position shown, the traverse of the yarn is restricted between it and the right hand end of the drum. When the yarn reaches the intersection of the groove, the finger prevents it from going beyond, so that it is turned back toward the base of the cone.

Figure 120 shows a 3-turn uniform rotary traverse being used to wind ply yarn, 3¼" traverse, on a large-diameter warping tube or cheese. In this illustration, the stop is applied at the center intersection of the rotary traverse, and the yarn is being wound on the left-hand end of the drum. A special tube holder, as shown, is ap-

Outstanding textile mill oil house in the Lockhart Plant of Monarch Mills, Union, S. C. Note positive identification of oil types on cradles. Facilities include monorail and chain hoist for handling oil drums, pan to catch inevitable oil dripping, and convenient buggy and dolly for oiler's use in the mill.

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plied to the standard spindle on the machine.

Table 14 shows the different lengths of traverse which may be obtained with the standard rotary traverses. It also indicates whether the winding is done on the right-hand end or the left-hand end of the drum. It should be understood that only the traverse lengths shown are obtainable, because the length of traverse depends upon the distance between the intersections of the groove and their extremities. There is no adjustment which can be made to vary these lengths one way or the other, except by locating the stop at one of the several intersections.

When it is desired to go back to winding full-length packages, it is only necessary to remove the stops.

TABLE 14

Short Package Lengths which may be Produced on the Roto-Coner

Traverse	Yarn Traverse (inches)	Winding at Left or Right End of Traverse	Short Lengths Obtainable (inches)				
2-turn (uniform)	5¾	either	4¼	2¾	1¼		
3-turn (uniform)	5⅞	either	4⅞	3⅞	3	1⅞	13/16
3-turn, half-accelerated	6	left	5 3/16	4¼	3¼	2¼	⅞
		right	4¾	3⅝	2 3/16	1⅝	11/16
2½-turn, full accelerated	5¾	left	5	4	2¾	1½	
		right	4¼	2⅞	1¾	¾	

Automatic Sizing Attachment. In order to produce cones or tubes of uniform diameter, the automatic sizing attachment, as shown in Figs. 121-A and 121-B, is used. This attachment is of particular advantage in winding dye tubes, where the diameter is most important. It relieves the operator of having to gauge for diameter, which takes an appreciable part of her time, specially in winding coarse yarns and when the packages are approaching full size.

As the winding package increases in diameter, the package holder will move away from the rotary traverse, causing the bearing (A in Fig. 121-B) to be rotated backward. The slide arm (B), being connected to the bearing, is raised; which, through a connecting rod (C), lifts the vertical slide (D) in which there is a notch (D_1). When the vertical slide becomes elevated to the predetermined height, the trip rod assembly (E) snaps into the notch and raises breakage lever (F) so that the package will be lifted entirely free of the drum.

To set the attachment, a package of the required diameter is used as a gauge; with the machine stopped, the mechanism is adjusted for this package by turning the nut on the connecting rod.

To prevent the package from continuing to rotate and scrambling the yarn on the surface, the mechanism includes a brake on the surface of the package. When the breakage lever (F) stops the spindle, the package is raised to its maximum height, and the ver-

Fig. 121-A. Automatic sizing attachment for Roto-Coner, to stop the spindle when the predetermined diameter of package has been reached.

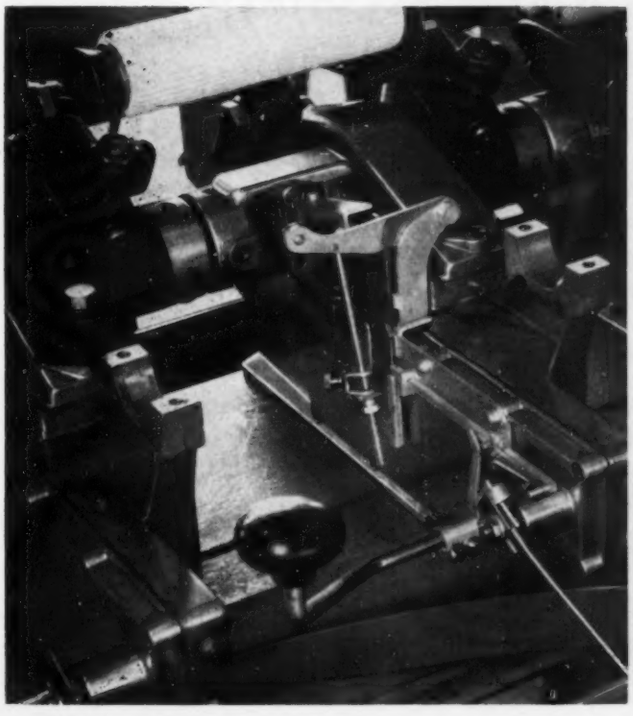
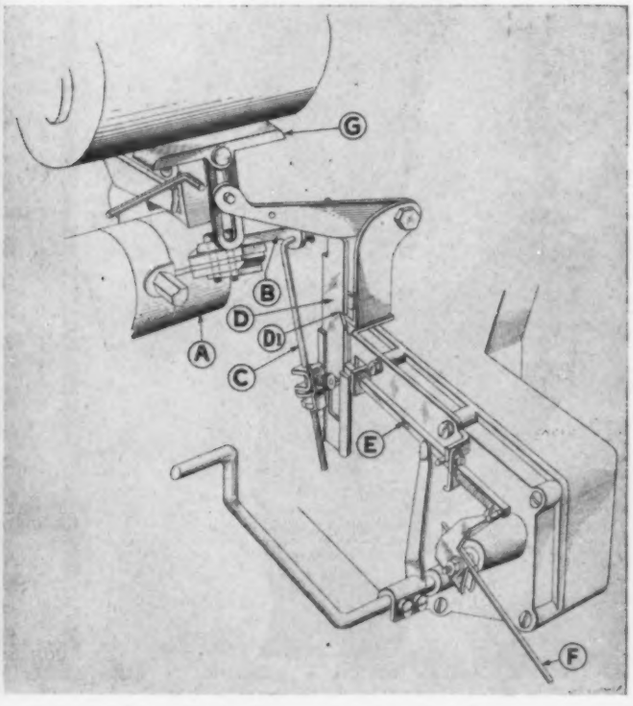


Fig. 121-B. Line drawing of sizing attachment, showing individual parts of the mechanism and how the brake functions when the spindle stops.



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tical slide (D) will press against the brake pad assembly (G), causing it to push up against the surface of the package and stop it from turning.

Empty Bobbin Conveyor. The empty bobbin conveyors, one on each side of the machine as seen at (A) in Fig. 122, are used to take the empty bobbins to the end of the machine and drop them into a box or boxes. By having the empty bobbins delivered at the end of the machine, it is not necessary for bobbin boys to enter the working alleys and thus disturb the operators.

Where only one type of bobbin is being used on both sides of the machine, a single large bobbin box is placed at the end of the machine to receive the bobbins. Where different types of bobbins are used on opposite sides of the machine, two smaller boxes are used at the end, each to receive the type of bobbin used on that side of the machine.

Where floor space does not permit room for the bobbin boxes at the end of the machines, a bobbin deflector, shown at (B) in Fig. 123, can be used. This deflector is attached to the bed of the machine above the conveyor belt and just inside the foot end. An opening in the conveyor trough is provided, and the function of the deflector is to roll the empty bobbins off the conveyor belt, through the opening in the trough, and into a bobbin box placed under the machine.

Where it is necessary that two different types of bobbins be used on the same side, a deflector can be installed at any point along the side of the machine to drop the empty bobbins into a box underneath. An opening is cut in the conveyor trough to permit the bobbins to pass through. When the intermediate deflector becomes unnecessary (only one type of bobbin on that side of the machine), it can be quickly removed, the hole in the bobbin trough closed with sheet metal, and the bobbins for that side will be carried the full length of the machine.

Preventing Drum Wraps. When an end breaks on some types of yarn, there may be rare instances when it will wrap around the rotary traverse, thus forming a lap which must be cut off. When it becomes necessary to remove such a lap, it is most important that the blade of a knife be inserted carefully *under* the lap, cutting *upward*. If the knife is used to cut down, the rotary traverse may be nicked to the extent that the yarn will skip from the groove.

In order to prevent laps from occurring, the Roto-Coner may be fitted with anti-wrap brushes as shown in Fig. 124. These brushes are made with flexible bristles,

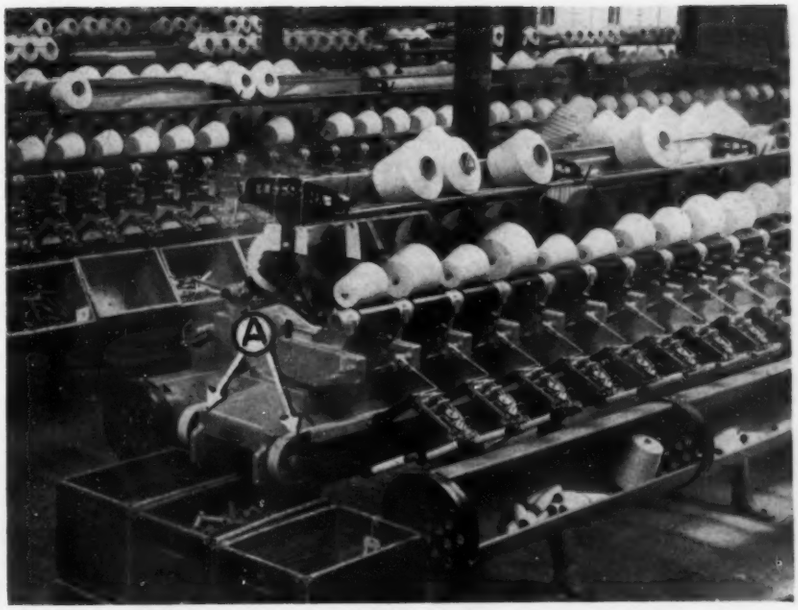

Fig. 122. Seen at (A) are the empty bobbin conveyors, one for each side of the machine.

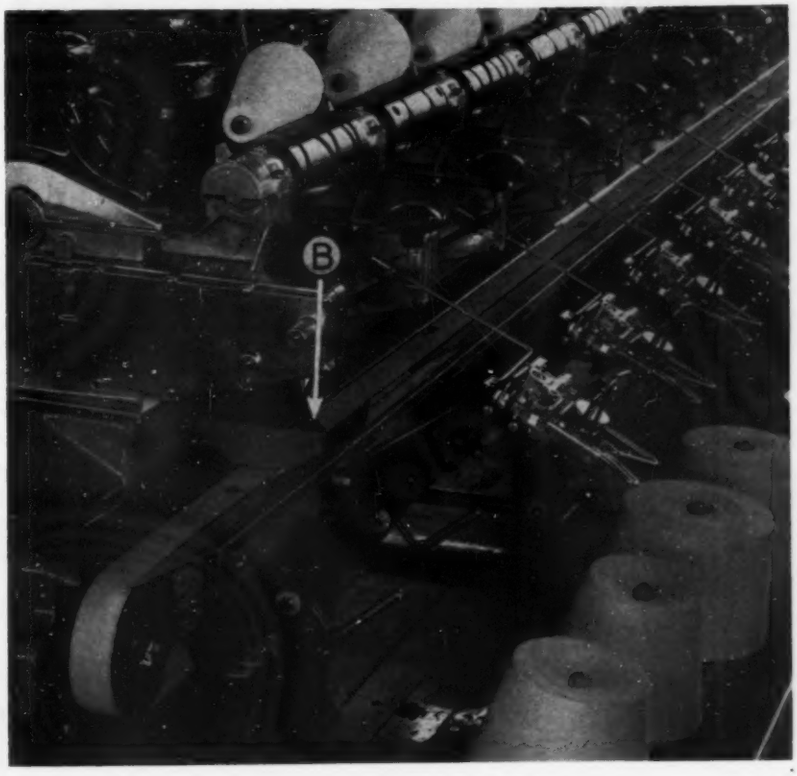

Fig. 123. When space does not permit boxes at end of machine, empty bobbins may be dropped inside by use of deflector (B).

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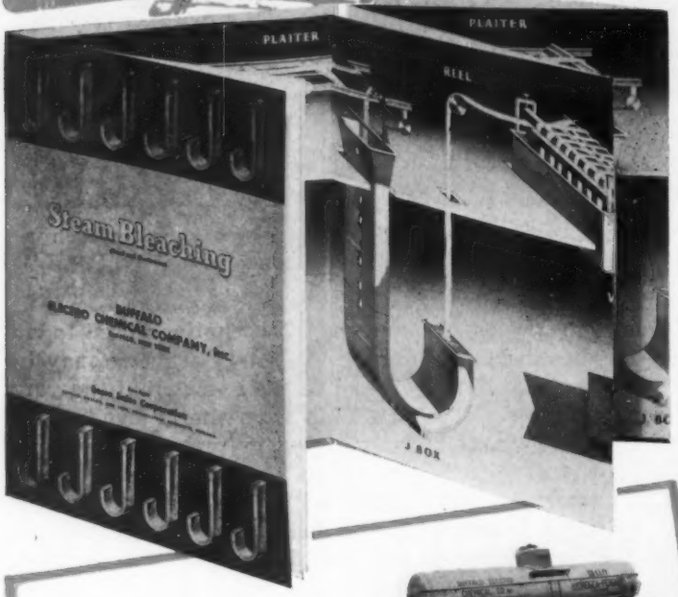

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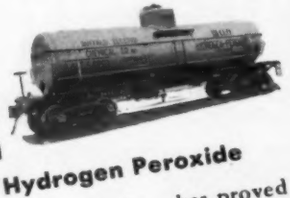

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the ends of which are set to barely touch the surface of the drum. These bristles will catch the yarn before it has an opportunity to wrap around the drum. The brush does this in two ways:

1. The movement of the air caused by the rotation of the drum is impeded and diverted by the brush so that the yarn is turned away.

2. The brushes are set at a high angle, approximately 45°, so that the ends of the bristles just skim the surface of the traverse; any end of yarn that continues as far as the brush will be caught by the upturned bristles. If the brush should be set at a lower angle, the ends of the brushes may be bent downward by the traverse and will not stop the yarn.

(To be continued)

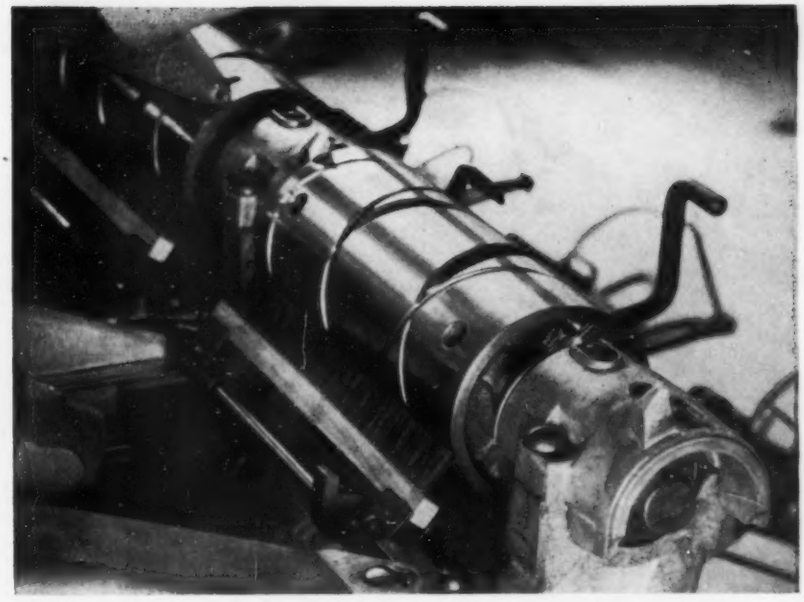

Fig. 124. Anti-wrap drum brushes, shown here, prevent yarn from wrapping around the drums.

Study Shows that Metals Affect Tippy Dyeing

Shrinkage control of wool fabrics of all kinds has created an unprecedented demand for materials which have been colored with dyes capable of withstanding repeated launderings without losing color body or suffering distinct shade changes, according to Henry E. Millson, of the Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J.

In a paper, "Studies of Wool Dyeing; Effect of Metals in Tippy Dyeing," presented before the AATCC in Philadelphia, Mr. Millson observed that this increased demand for wool materials having combined excellent fastness properties, brightness of hue, and solidity of shade points to the greater use of the top and meta chrome procedures by wool dyers.

He pointed out that the elimination of tippiness to obtain solid shades and the reproduction of shades from batch to batch have become problems whose solution may be found through further study of the causes of tippy dyeing.

The analysis of mill problems has shown that many conditions can cause wide variations in shade. The effect of metals on the deposition and distribution of dye within the individual fibers has been investigated in Mr. Millson's study. The report states that presence of metals in the dye bath is an important factor in the tippy dyeing of wool.

In a discussion of sources of metal contamination, it was observed that interfering metals can be introduced into a dye bath in many ways. Dyes themselves may contain these metals as impurities, though manufacturers of dyes make stringent efforts by purification of intermediates and careful selection of construction materials to eliminate or reduce to a minimum the amounts of aluminum, iron, copper or other metals in their products.

Although modern dyeing machines are generally constructed of stainless steel and will not cause serious metal effects, some have iron spiders, bronze and brass segments, copper nails and springs, and iron piping which will have an effect on wool dyed with chrome dyes at low pH in these machines. It points out that water is also a source of dye bath contaminants in the forms of aluminum, iron, calcium, and magnesium salts, and, if all these contaminating sources are taken into consideration, it is easy to understand that wide variations in shade from batch to batch are likely to occur.

Experiments, which are cited on the preferential metallization of dye on tips and other damaged areas using the top chrome procedure, demonstrate that preferential metallization of the dye takes place almost to the exclusion of the dye in other parts of the fiber when limited quantities of metal are present, with variations occurring in those areas which have been damaged by sunlight, weather and other natural agencies.

Textile Information Booklet

As a public service, the Textiles Section of New York Board of Trade, Inc., 291 Broadway, New York 7, N. Y., has published a booklet entitled "Inventory of the Resources of the U. S. for Textile Research, Development, Education and Testing."

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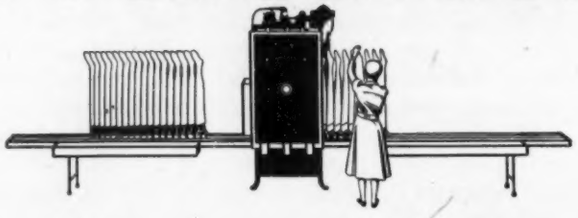
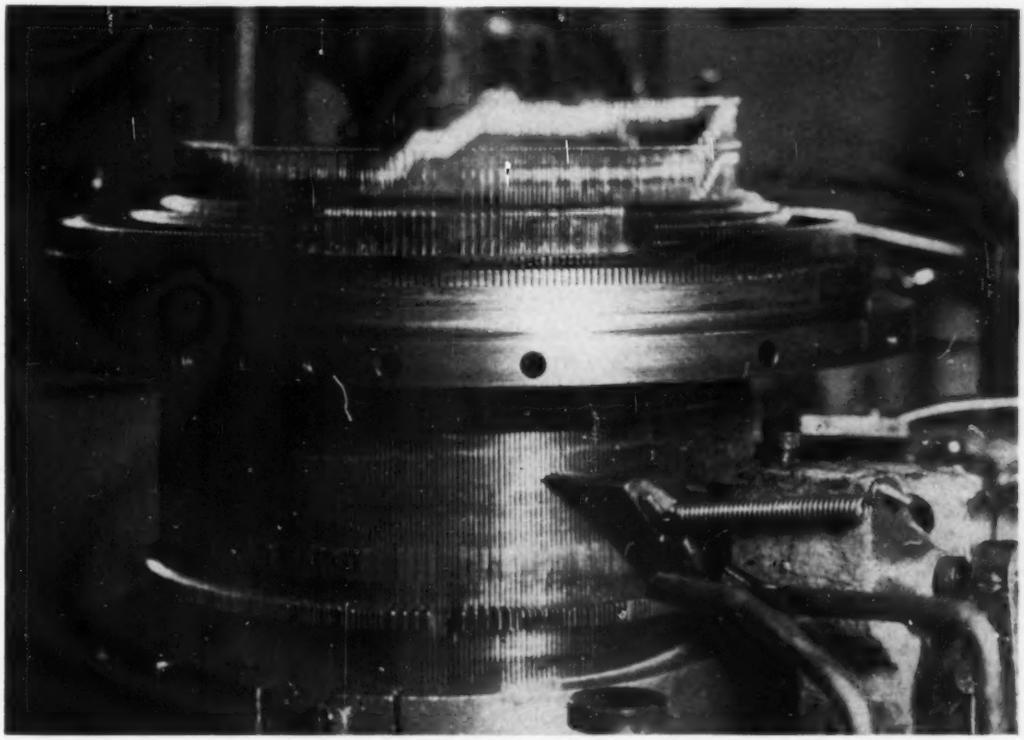




The 400-needle machine is precision built and requires precise fixing. This photo shows a 400-needle machine with the needles exposed.

To align sinker slots an equal distance between each needle, alternate needles should be removed from 4 equal positions as shown.

Preventing Streaks in Nylon Hosiery

By STANLEY ROSENBERG
(Canada)

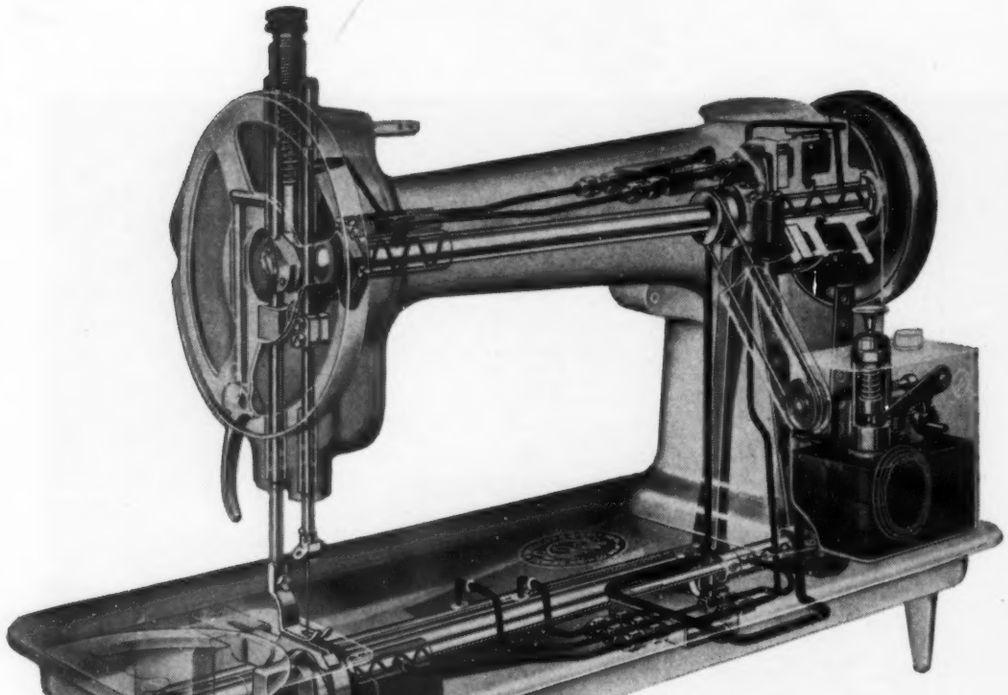
EXCLUSIVE

THE CAUSE of streaks in circular knit ladies' nylon hosiery is often a problem even in modern hosiery mills. Diligent effort is required of the fixer whose duty it is to find the source of trouble and eliminate the streaks regardless of whether they are horizontal or vertical. In many instances it is difficult to find the source of trouble causing streaks, and some fixers lose their patience, throw their tools aside, and allow production to continue with streaks appearing in the hosiery.

One hosiery mill that operated over 100 Model K, 280-needle machines, had a fixer who worked for a month to find the cause of streaks and then gave up because he could not find the source of trouble. Another man on the same job eliminated the streak problem by replacing the inside sinker ring, overhauling the machines thoroughly, and installing new needles. The transfer dials were checked and centered. Each fixer was allotted his quota of machines to keep free from producing streaky goods, and when he was made responsible for them he kept his section producing with good results.

It is not good policy to assign a fixer to a particularly delicate task until his experience allows him to overcome the details of such a job. This is especially applicable to the finer gauge machines.

Poor policy regarding the assignment of fixers is often the cause of faulty goods after the machines have been placed in operation. If a group of new machines is installed in a mill and a fixer with insufficient experience is assigned to place them in operation, the results of the inexperienced fixer's work may not show up until later. Bent cylinder walls, damaged transfer dials, and many forgotten smash ups in the beginning may be reflected later as the op-



Here's the Inside Story of the "W&G" Lockstitch

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erative tries to coax from each machine the perfection of quality and production which is necessary in order to keep his position and compete with other mills producing fine quality hosiery.

Experimenting with new machines should be kept to a minimum when they are to be used for production. If a thorough understanding of the machine is acquired, there will be no need to experiment. Experimenting should be left to the machine builder. Snap decisions and hasty adjustments on fine gauge machines are definitely a risk. Even if the fixer is an expert, it pays to exercise every precaution in adjusting and maintaining the machines for quality production.

In order to deal with the streak problem in any type of ladies' hosiery, it is necessary to have a good understanding of the thread used, the proper tension, and condition of the yarn as it is being knit. These must be fully considered to obtain best results on a production basis. At one time the tendency was to knit with excessive tension on the yarn to insure a better formation of loops. Actually, if a machine is run with a minimum of tension, the danger of streaks is reduced.

It was once considered necessary to knit the fabric tightly with small loops to obtain a finely balanced fabric. However, if the loops are crowded, tight streaks are more likely to occur. On the Model K 280 to 300-needle machines it was necessary to have a finer loop formation because there were less needles as compared with the late model 400-needle machines.

On the 280 to 300-needle machines, the range of yarn count that could be run was greater, and unless the fabric was knitted too loosely, good results usually were obtained with regards to streaks. If the machines are kept perfectly balanced with needles straight, and stitch cam and sinker cam settings correct, the fabric is usually satisfactory.

The 400-needle Machine. The newer machines restrict the range of thread counts that can be used. This machine is precision built and requires precise fixing. The denier of nylon used in the leg usually ranges from 10 to 30, and the number of courses that are knitted in each style of stocking can vary. Some mills have more links in the chain layout than others using the same denier yarn.

Excessively tight knitting should be avoided to prevent the formation of tight streaks. The danger of tight streaks increases with the denier of the yarn used, especially in the ankle of the hose.

New Assembly Helps. The new type flat bottomed left stitch cam and the new style sinkers and sinker cap cams and settings have helped in alleviating the danger of tight streaks. This assembly of parts has been numbered R-2636X.

The leg yarn tension device has been altered to allow the automatic application of more tension for thread cutting during yarn changes. A major improvement was made possible with the introduction of this completely new attachment which can be incorporated into the 400-needle machines. The assembly aids in eliminating tight streaks in addition to permitting definite control over the length of stockings as compared with machines not equipped with the assembly.

As a precaution, the adjustments on this assembly should be correctly maintained, and careful attention should be given to the left stitch cam setting. Otherwise the needle raceway may become enlarged due to wear and occasional needle jams. The correct settings and gauges should be secured from the manufacturer of the machines. The accompanying photographic illustrations show some of these gauges and how to use them.

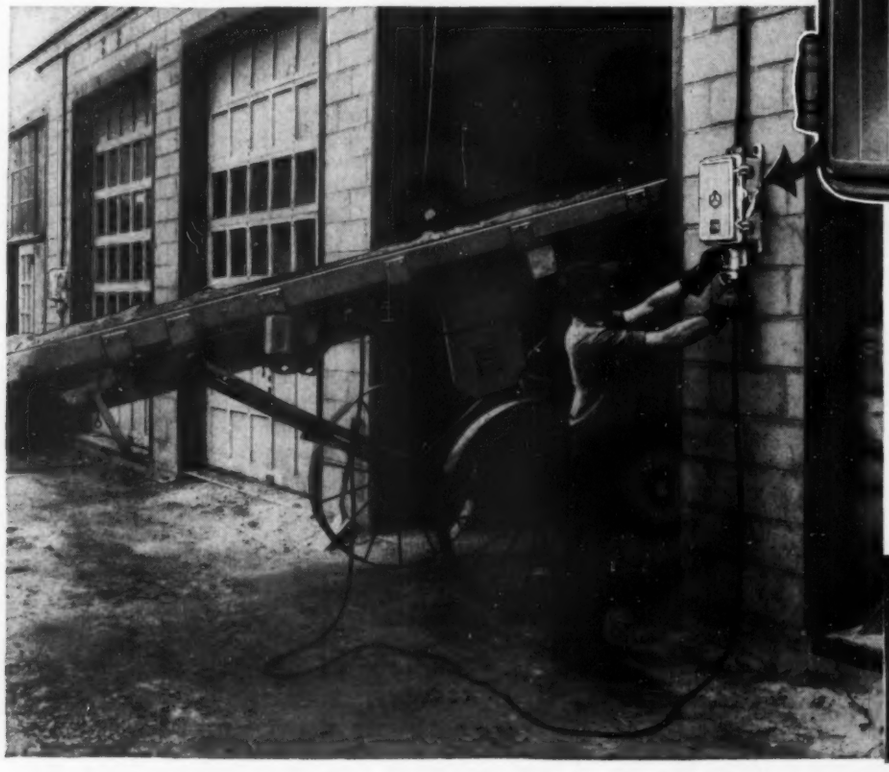
Tight or Loose Lines. The afore-

Left, the new style flat bottomed stitch cam is shown in the author's right hand. The old style cam is shown in the left hand. The new cam helps in alleviating the danger of tight streaks in fine gauge hosiery. Right, the author shows the method of gauging the new style stitch cam for height. A new type gauge is used for this purpose.

Type WMKS **Interlocking** Safety Switch and Plug Receptacle

CONDULET*

for the control of all kinds of **portable electrical equipment** in both indoor and outdoor locations



Type WMKS Interlocking Safety Switch and Receptacle Conduiet with Type DP Interlocking Plug

It's heavy duty! It's raintight!

Safety. Positive interlock prevents opening the case or withdrawing the plug unless the switch is "off". Switch can't be turned "on" unless the case is closed and the plug fully inserted.

Switches. Motor circuit switch. Quick make and break. Double break, reinforced, positive pressure-type blade and jaw construction. Positive pressure fuse clips. Combination solder or solderless wire lugs. 2 or 3-pole fusible.

Plug Receptacles. Style 1 is grounded through the shell of the plug and the receptacle housing. It will take the plugs used with the former Type MKS of the same rating. Style 2 is grounded through an extra pole and the shell. An eyebolt and wingnut prevents accidental withdrawal of the plug when the switch is open.

Cast metal case. Strong and durable. Four sturdy mounting feet. Many possible threaded hub arrangements for both vertical and horizontal conduit. Cover may be padlocked to prevent unauthorized entry. Operating handle may be padlocked "on" or "off".

Threaded operating shaft. Bearings permanently lubricated to resist corrosion and prevent the entrance of dust and moisture.

Horse-power ratings. 2 through 50 H. P. 30, 60, 100 or 200-ampere. 230 or 575-volt A. C.

Listed in Condulet Catalog 2500, Section 50.

*CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

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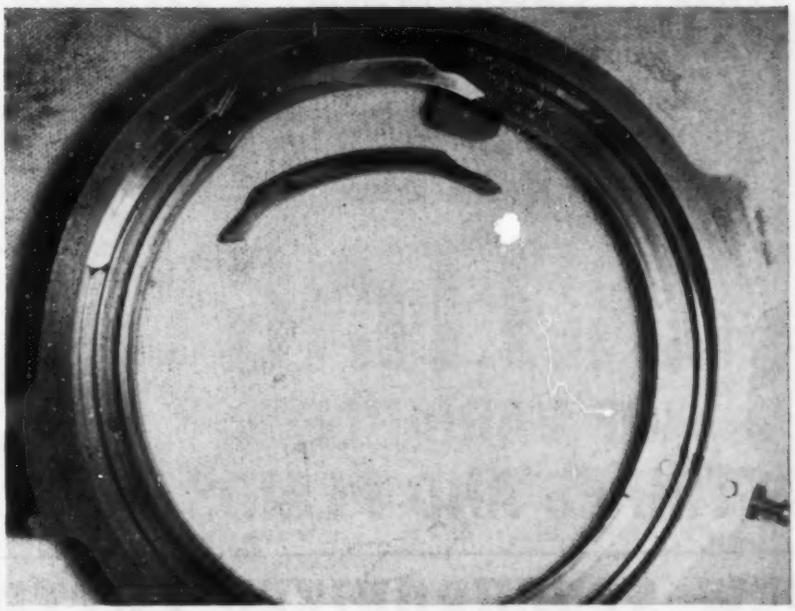
mentioned development practically eliminates streaks and reduces the problem to tight or loose lines. First, the adjustable sinker top must be lined up so that the sinker slot on either side of the needles is in the proper position. This can be done by removing all sinkers from the head and every second needle in four equally divided places in the cylinder. Loosen the screws that hold the sinker top, and by using a magnifying glass, bring the ring into perfect alignment.

After this operation, if the ring fails to align with the needles at any point and streaks occur, it may be necessary to try another adjustable sinker ring. To be certain that the outside sinker ring lines up with the inside one, it is necessary to remove the clamps and loosen the screws that hold the pins against the cylinder. Leave this outside ring free until all sinkers are replaced, and the sinkers will aid in aligning the rings. Carefully tighten the screws slightly at opposite points before replacing the clamps. This seems to be the best way to set the outside ring.

It is good practice to use a dial indicator for the final setting, but care must be taken not to pull the outside ring out of alignment with the inside one. The small tolerance allowed for the sinker to slide in the slot in the outside sinker ring section adds to the necessity for precise alignment. Each sinker must be free to move easily, and such things as warped sinkers, impurities in the oil, etc., prevent good clear stitch formation.

A very useful device to use in preventing the accumulation of foreign matter in the outside sinker ring slots is a thickness gauge. By clearing these slots thoroughly, streaks caused by sticky sinkers will be reduced.

Cleaning. The oil used on the needles, sinkers, and cylinder jacks should be of the highest grade obtainable and free from impurities which could cause malfunction of the machine. It is desirable to use a gravity feed device to oil needles and sinkers continuously. The film of oil on each needle allows the thread to slide more easily, thereby permitting a better loop formation.



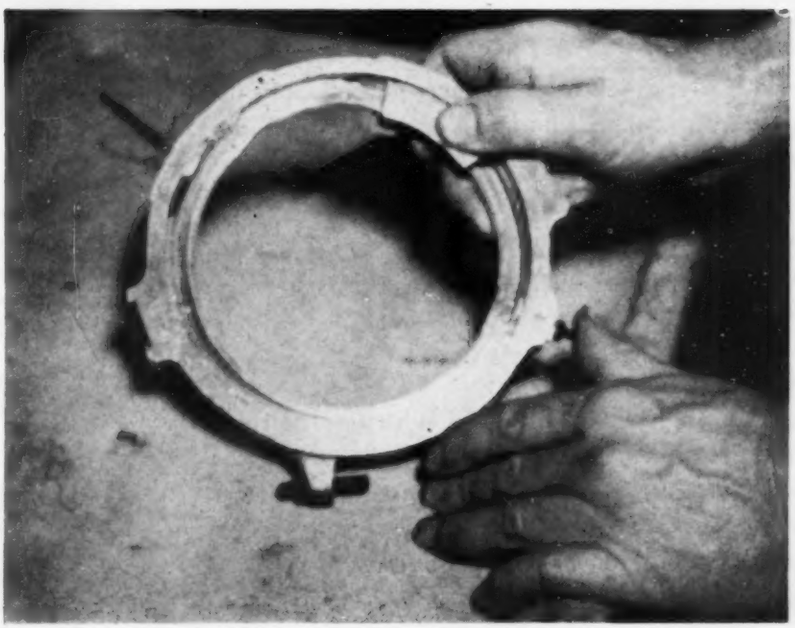
Showing sinker cap with new type center sinker cam inserted. An old style center cam is shown for comparison. The use of the latest type parts for 400-needle machines helps prevent streaks.

A good needle and sinker cleaning solvent can be used in conjunction with the oil to prevent any accumulation of residue on the sides of the needles and sinkers. A suitable solvent of good quality should be selected for this purpose.

Needles. It is not good practice to have a number of old needles and new needles both in the same cylinder. If the sinkers are functioning properly and the needles are in perfect condition, attention should be directed toward removing or preventing separate needle lines in the fabric.

Frequently when the needle moves up and down in the needle trick, the top of the needle may

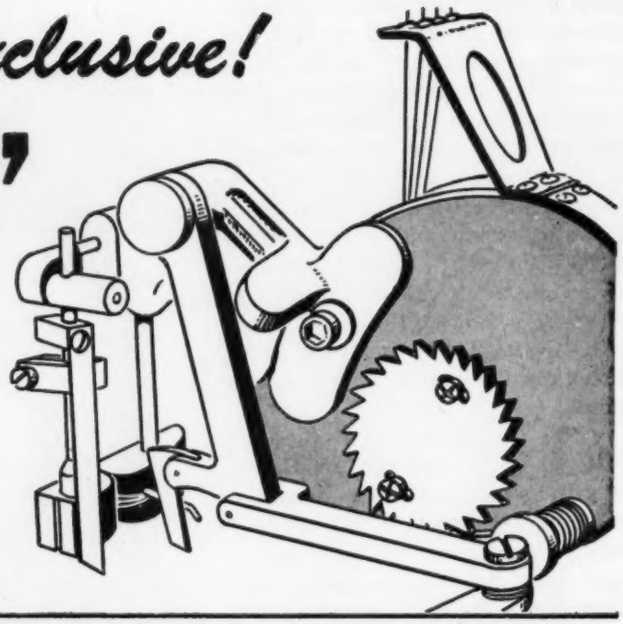
As shown here, a new type sinker gauge is used in setting the left and right sinker side cams. It is essential to maintain the correct settings and adjustments on all parts in order to prevent streaks.



Now... Supreme Exclusive!

"NO-WASTE" KNITTING

OF VARIABLE STRIPES AND PLAIDS



NEW SYNCHRONIZED CUTTERS* ELIMINATE ALL WASTE WHEN CHANGING COLORS

Model SA-ROF. Modern in design, proven in use, backed by experience.

This revolutionary Supreme development gives chest stripes, blazers and plaids a sales appeal that was never before possible. It saves yarn, dollars and time. It means clean-as-a-whistle fabrics that are easier to finish because the cloth does not have to be reversed. Easier to sell too; the buyer gets all cloth for his money . . . there's no braid of waste added into the cloth poundage.

An exclusive Supreme feature, the new waste-eliminating cutters are available on the Model SA Automatic Variable Striper and the Model SA-ROF Variable Stripe and Plaid Knitter.

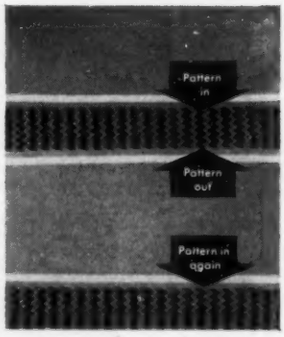
Here's how it works...

Each striping feed is equipped with one of these simple cutters. At the correct instant, the yarn that is going out of action is clipped off close to the narrow seam. It is then held in a unique clamping device along with the other yarns, each ready to go back into action the moment the pattern calls for it. No waste yarns, no floating yarns, no special and intricate stop motions.

*Patent Pending

SK-120

Another New Development



THE AUTOMATIC PATTERN PLACER

Available on the Model SA-ROF, this new device lets you place a pattern wherever you want in plain or striped jersey cloth. You can engage or disengage the pattern at will, separating the pattern with plain or variable striped fabric. The result? Practically any combination of patterned and plain or striped jersey.

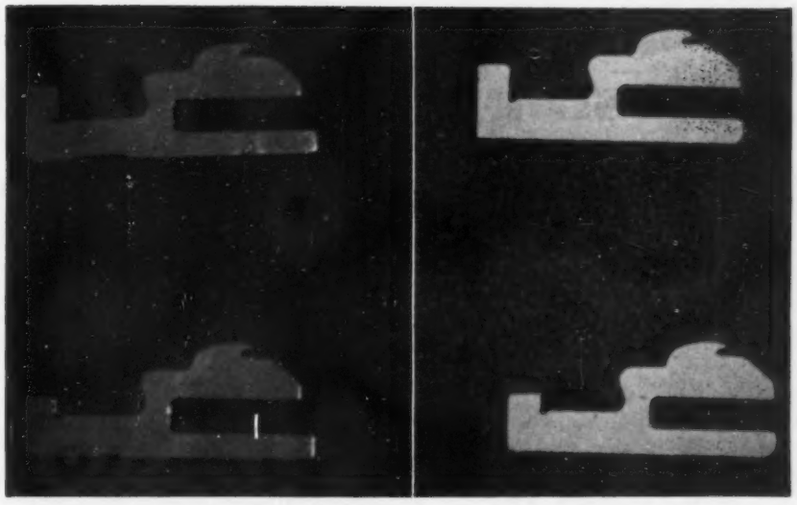
Write today for the free booklet "Variable Stripes and Plaids Pay" and free cloth samples that show other unique features and wide knitting ability of the Models SA and SA-ROF.

SUPREME

KNITTING MACHINE CO., INC.

107 JOHNSON AVE BROOKLYN 6, NEW YORK, N. Y.

move slightly to the right or left if the trick is the slightest bit crooked. This movement to the right or left will also occur if the needle is bent slightly. Fine gauge needles cannot be handled too carefully to prevent bending them. Any needles that show any movement as mentioned may cause streaks and should be removed to prevent tight and loose lines in the fabric. Needles should be changed by hand from one location to another in the cylinder instead of being handled with pliers unnecessarily. If a fixer spends some time practicing this method of of changing needles he will be able to eliminate lines in the finished fabric.



The design of the sinkers has been improved as shown at left. Note the long legs as compared with the old ones at right.

Precautions. Attention should be given the needle latch opener to see that it is adjusted exactly right. Pressure of the stop motion feeler should not be allowed to affect needle latches when press-offs occur. The transfer bits in the dial must be centered between each needle, and everything that is done to prevent needle damage during operation of the machine eliminates that many more causes of streaks. Knitters should be cautioned against treating the machine roughly.

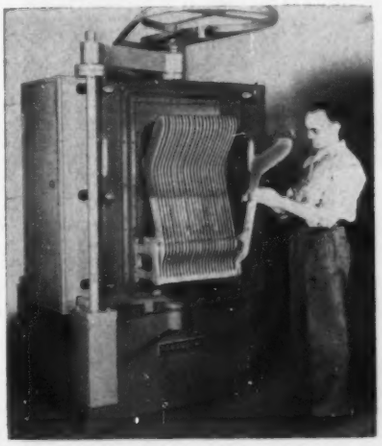
Horizontal Streaks. Unfortunately no cure-all has been discovered for horizontal streaks or rings in stockings. However, a few suggestions may be helpful in preventing rings or horizontal streaks. Regardless of whether the cone or pirn of yarn is mounted vertically or at an angle, the first eyelet or guide should be in the center in relation to the cone or pirn. This is particularly important when 15 denier yarn is being run because the tension on such fine yarn must be negligible. It is necessary to run this light yarn at an angle of approximately 45 degrees.

Care should be exercised to see that the cone or pirn is not handled by the knitter or other operatives. If the threads come in contact with the hands, any slight amount of perspiration, oil from the skin, or dirt tends to cause the thread to "pull" hard. If a wire or band is used to deflect the thread away from the end of the pirn, it must be wiped clean before allowing the thread to run in contact with it. If the operative's hands come in contact with this band, a smudge on it will result, and this will prevent proper passage of the yarn.

Some types of horizontal rings can be caused by rough handling in wrapping the cone or pirn. However, such rough handling usually results in yarn breakage. In a few instances horizontal streaks have resulted from the physical appearance of the yarn which is controlled in manufacturing the thread. Such streaks are relatively rare and there is nothing the fixer can do to remedy this type of defect.

VERTICAL RETORT FOR NYLONS

This vertical retort with fully automatic electric controls is designed especially for preboarding half hose and anklets made of spun and filament nylon, or combinations of nylon and other yarns.



Features claimed for the new machine are: compact design—less floor space is required; a new type aluminum form is utilized—the form and rocker arm are cast in one piece; new type single revolving door accommodates 72 forms, 36 mounted on each side; automatic electric controls provide controlled finish.

The retort accommodates the smallest size children's forms and as large as size 14 in men's forms.

Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago, Ill.

For additional data, request item E-203, using business reply card on page 230.

Adjustable Needle Head Gauge

for Single-Unit Full-Fashioned Machines

Staff Prepared

EXCLUSIVE

AN ADJUSTABLE gauge can be used for quickly aligning needle heads on Wildman, single unit full-fashioned knitting machines. The device assures that the bar is straight so the loops on one side of the stocking will not be tighter than those on the other side. Needle heads out of alignment always cause the work to run crooked and uneven, in addition to affecting other parts of the machine.

The adjustable needle head gauge for Wildman, single-unit full-fashioned knitting machines is held in place for a quick adjustment in aligning the needle head. The setting can be made quickly and effectively if the needle head is within one eighth of an inch of the correct setting. Note the undisturbed stocking in place and the regular gauging tool turned bottom side up in right foreground.

The adjustable gauge consists of two principal parts and a screw for locking them in place together when they are set for the measurement. The bottom part of the gauge has a straight edge at the front end which serves to guide the device along the table rail in front of the needle head. Grooves are provided for the top part of the gauge to slide in either direction for the adjustment. A slot through the top of the gauge has a stud passing through it on which a finger nut can be tightened to lock the moveable part in place. This gauge does not replace the regular needle head gauge, but is intended to be a supplementary tool for quick minor adjustments.

Procedure for Making Adjustment. Assuming that the needle head is within one-eighth of an inch of the correct setting, the gauge is placed in position on the cross bar and the adjustable portion is set to barely touch the needles. Then it is moved across the bar, and the needle bar is set by loosening the set screws, adjusting the head until the needles are in proper relation to the gauge, and then tightening the set screws.

The entire adjustment can be performed without regard to or interfering with the fabric being knitted; whereas with the regular gauging tool, the fabric has to be removed from the machine before the adjustment can be made. The adjustable tool is valuable for making quick adjustments in obtaining uniformity of loop formation on both sides of the stocking.

Regular Method. The usual method of adjusting the needle

Have your car lubricated regularly

To keep your car "tuned-up", follow a regular 1000-mile lubrication program.

Have your Full-Fashioned Knitting Machines checked—regularly—to keep them at highest efficiency . . . Follow a regular program for reneedling and your needle bars are always in shape for better knitting . . . Follow a regular program for reconditioning and your plant is always at peak performance. We will be glad to discuss this matter of regularity as it applies to your mill operation.

TEXTILE MACHINE WORKS • READING, PA.

The "READING"
Full-Fashioned Knitting Machine

Uniform length where it matters

Check two or a hundred Textile Spring-Beard Needles for uniform length and you'll find that they are identically the same from butt to beard. This scientifically-accurate length is achieved through Textile's quality controls — automatic and electronic — that govern each stage of production.

Uniform length is just one of the numerous advantages you receive when you buy Textile Spring-Beard Needles for your needle bars. No detail is overlooked in the manufacture of quality-made Textile Spring-Beard Needles to bring you finer quality knitting.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

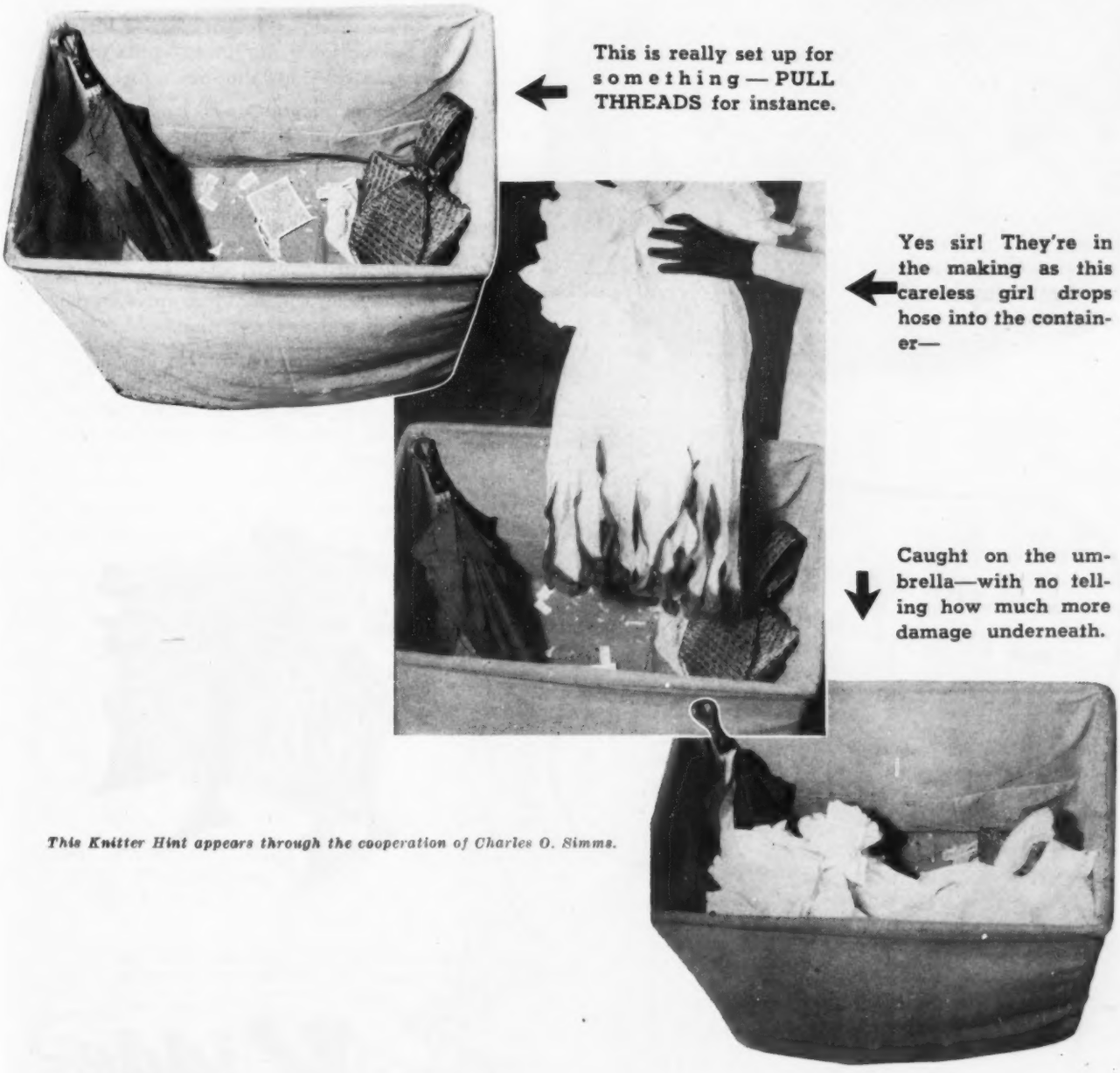
For Full Fashioned and Warp Knitting

head, using the regular gauge, requires getting all of the rollers on the high part of the main cams. This means that the slur has to be located in the center of the sinker head. Then it is necessary to place a gauge between the press rollers and the press roller cam to push the needle head in. After removing the fabric, the adjustment is then undertaken with the regular gauge.

The adjustable gauge was made by G. E. Barclay, Crossville, Tenn., although the idea originated elsewhere and is used in several full-fashioned mills.

Knitter Hints (No. 27)

Baskets Are For Hose Only



This is really set up for something — PULL THREADS for instance.

Yes sir! They're in the making as this careless girl drops hose into the container—

Caught on the umbrella—with no telling how much more damage underneath.

This Knitter Hint appears through the cooperation of Charles O. Simms.

For better laundry net, investigate the *Kidde Knitter*

Nylon net produced on the *Kidde* Knitter offers exceptional durability—plus these other features that laundries want:

1. The net is runproof, because each end is anchored. Even if snagging causes a hole, the hole will not spread.

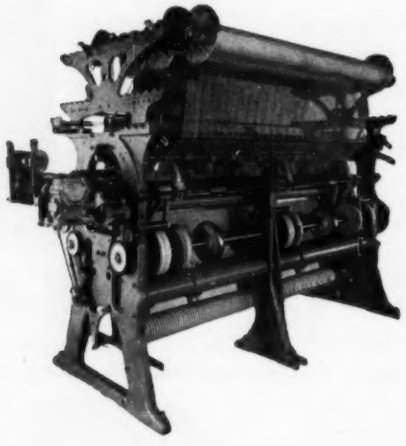
2. The net can be produced with large-size holes—giving better penetration by water and washing solutions than can be obtained with woven nets.

3. The holes will not close up when the net is full and under tension.

Of course, when you knit laundry net—or practically any other net—on the *Kidde* Knitter, you also get the advantage of *high-speed production*, with resulting savings in cost.

Use the Kidde Knitter on these fabrics too

ELASTIC FABRICS for corsets, girdles and brassieres. DRESS FABRICS. NETTINGS and VEILINGS. DISHCLOTH MATERIAL. CURTAIN FABRICS. NARROW FABRICS. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters and polo shirts.



Free literature is available on the Kidde Knitter. Write for your copy.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

Kidde Knitter

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Tricot Pre-Setting Machine Developed by Avisco

A machine to pre-set rayon tricot fabrics has been developed by American Viscose Corporation's textile research department, and will be manufactured by the Van Vlaanderen Machinery Company. It eliminates the necessity for tacking and untacking selvages to prevent the setting of the curl in the edges of fabrics during dyeing, according to the announcement.

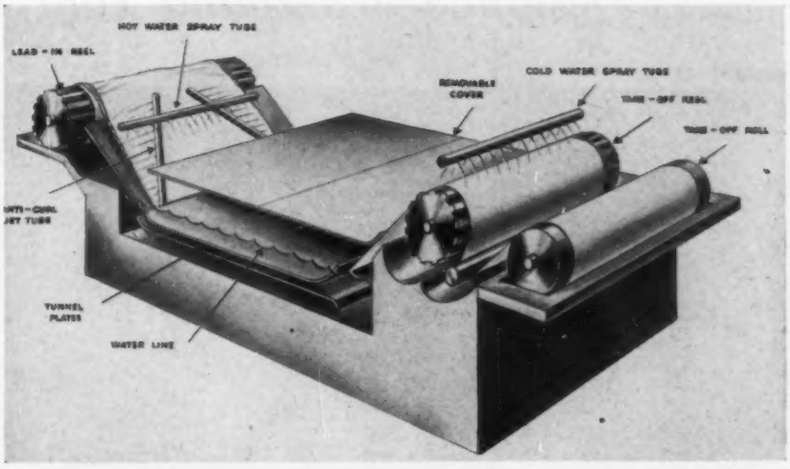
It results in straight course lines and prevents "crow's feet" and crease marks, it is claimed. Other advantages cited are: control of stability of acetate rayon tricot, improved hand, and the knitting of longer lots which may be dyed continuously.

Sprays of boiling water directed toward the edges of the fabric uncurl them and keep them uncurled until the goods move between two parallel steel plates for the setting process. Coincident with the sprays directed toward the edges, a third hot spray is directed downward onto the center section of the fabric for lubrication while it moves over the inclined steel entry plate. A cold spray plays across the entire width of the cloth as it emerges from between the plates to complete the setting.

The commercial machine being built by Van Vlaanderen is expected to handle 2500 linear yards of acetate rayon fabric per hour. The over-all size of the machine will be fifteen feet long and about sixteen feet wide so that it can accommodate full-width tricot goods. To enable it to handle a wide variety of textile chemicals, plans are to build it of stainless steel. Thus, it is believed that the machine may be used to pre-set viscose rayon tricot as well as acetate rayon goods. Experiments are under way with a view to using it also on nylon fabrics.

Van Vlaanderen Machine Company, 370 Straight Street, Paterson 3, N. J.

For additional data, request item E-201, using business reply card on page 230.



Machine developed by Avisco for pre-setting rayon tricot fabrics.

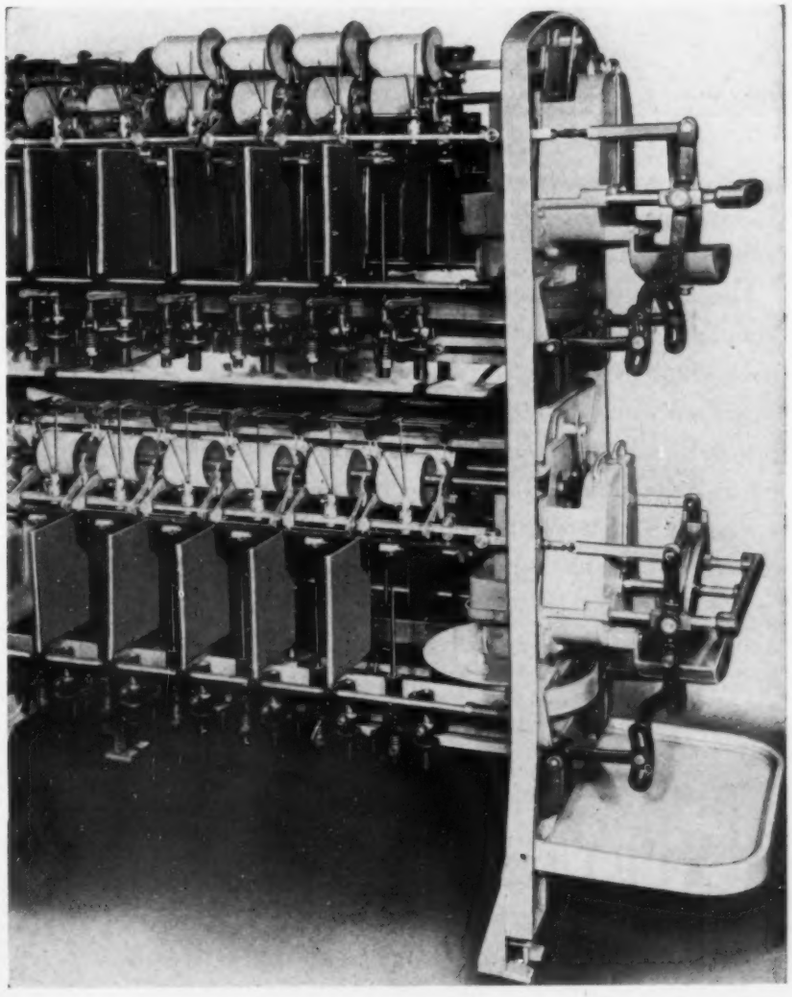
New Twister Builds Package Permitting Over-End Delivery

A new twister has been developed for the throwster that utilizes a take-up package employing one head, thus permitting over-end delivery of the yarn. The take-up package, designated the "King-Spool," is a bobbin with a cone head on a cylindrical tube, and can be made to any capacity conducive to good spinning.

Among the many advantages claimed for the King-Spool twister are:

1. The package permits over-end delivery without allowing the yarn to slough off.
2. The package is designed so that a tail used in magazining may be employed.
3. The open end and open wind allow for easier and more thorough

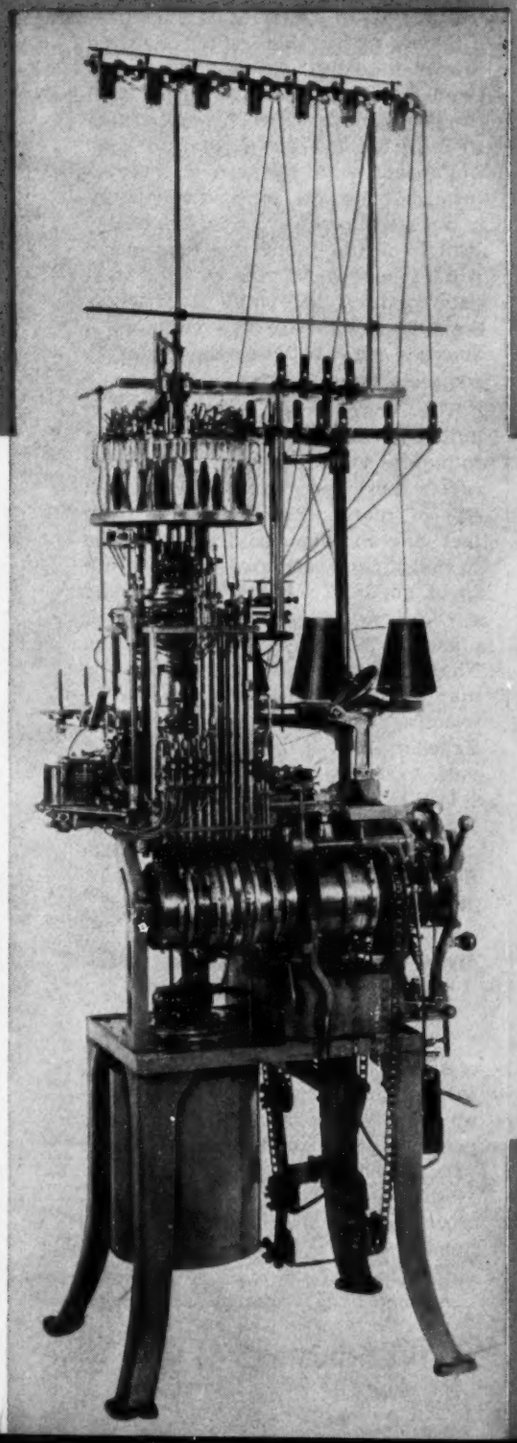
The "King-Spool" twister by Fletcher.



The Second of a Series of New Knitting Machines
Designed to Expand Your Hosiery Market

The New Scott & Williams Komet Wrap Machine

Produces Embroidered Clocks and Wrapped Patterns on Komet Broad Rib Hose *in a Single Knitting Operation*



For many years men's wrap hose and slacks have been an important factor in the hosiery industry. And in recent years the Komet Broad Rib has been becoming more and more the dominant hose for men.

Heretofore, wrap clock and pattern features in Komet Broad Rib hose have been unavailable except by means of slow and costly hand embroidery or Swiss clocking machines.

But now, with the new Scott & Williams Komet Wrap Machine, Komet Broad Rib hose can be produced with an infinite variety of embroidered clocks and wrapped patterns *in a single knitting operation.* Thus, you can offer hose with the well-known broad rib advantages, plus all the color and proven appeal of wrap patterning.

Here is another Scott & Williams development that provides opportunities for new business and new profits. Ask your Scott & Williams representative for samples of hosiery and complete details on the new Scott & Williams Wrap Machine.

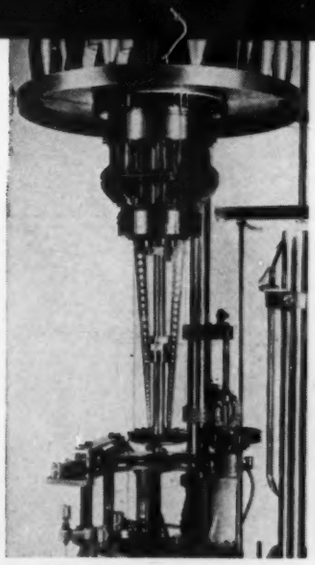
S·W

SCOTT & WILLIAMS, INC.

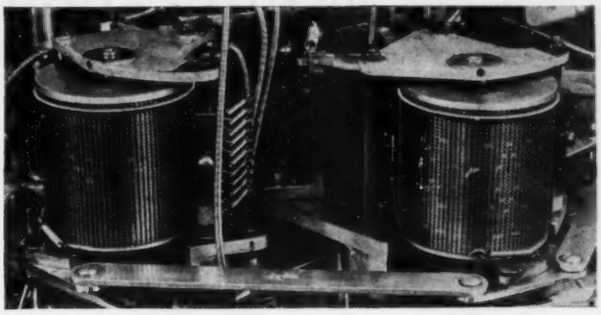
Established 1865

MAIN OFFICE AND PLANTS: LACONIA, NEW HAMPSHIRE
Sales Office: Empire State Building, New York 1, N. Y.
Divisional Offices: High Point, N. C., Reading, Pa., Chattanooga, Tenn.

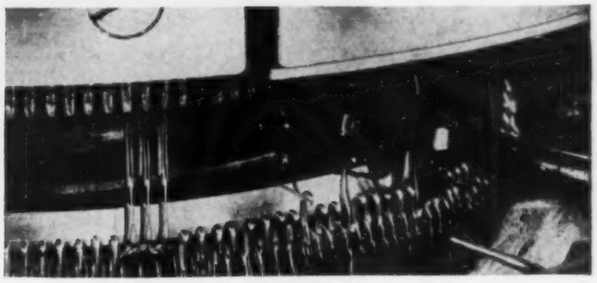
1. *New labor-saving draw-thread for hose separation.* This newly designed feature increases production 30% to 40% per knitter, with corresponding savings in knitting costs.



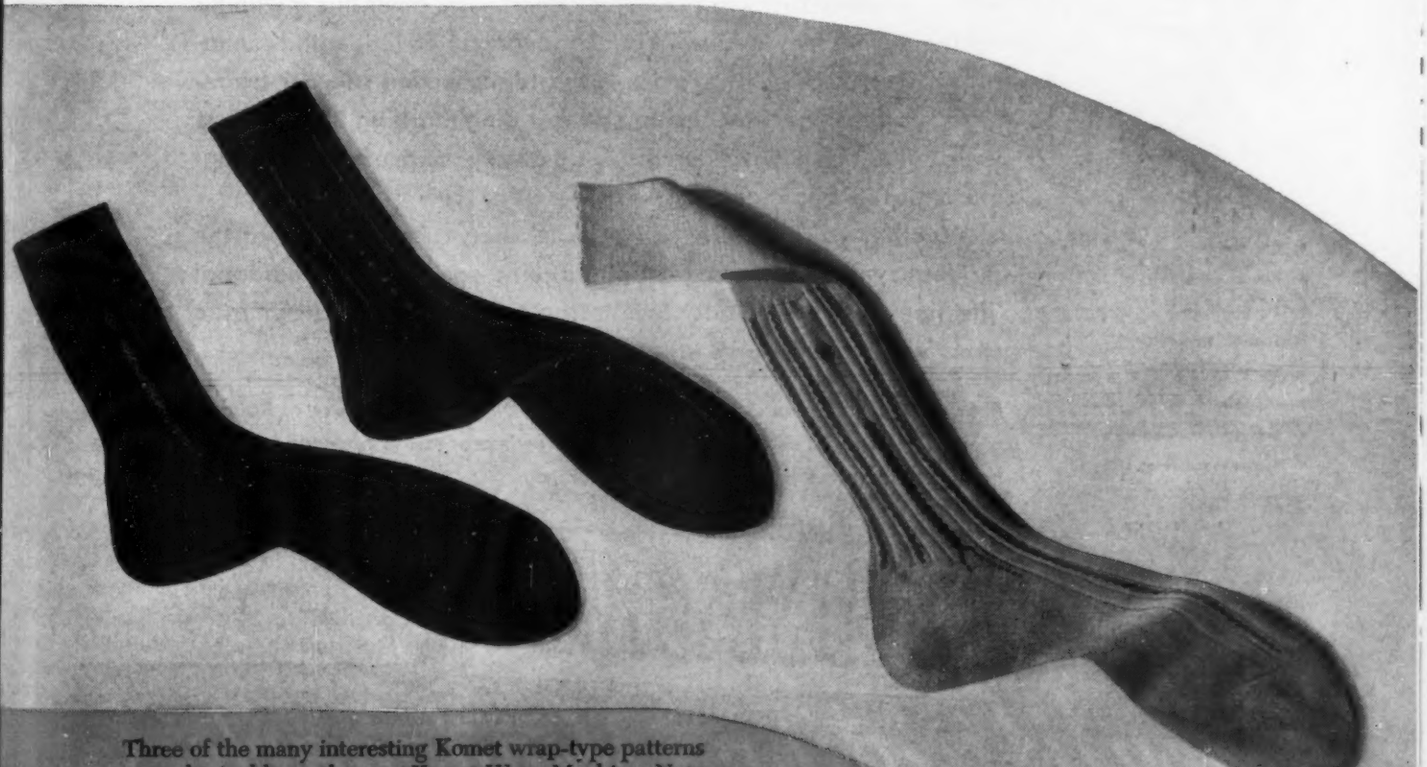
3. *A special wrapping mechanism,* based on successful HH-PW experience, has been designed for this machine. Being counterbalanced, the entire wrap head lifts out of upper cylinder, swings to the side and down for instantaneous re-threading and pattern changes, and is easily returned to knitting position. No other machine is so equipped. Wrapped designs of one to thirteen needles may be made.



2. *New triple-racking, two-drum patterning device.* Available only on the new Scott & Williams Komet Wrap Machine. One of the drums is used when single color wrap patterning is desired; both when color-in-color-and-beside-color patterns are wanted. Each drum has 96 pattern jacks and 96 moving racks, and by means of a new and unique mechanism can operate at three different levels, increasing to 288 racks and courses, rather than 96, the length of wrapped clocks.



4. *Positive positioning of wrap yarn fingers in knitting.* Only on the new Komet Wrap Machine are wrap yarn fingers cammed out ahead of needles in the lower cylinder selected for patterning, and held stationary by wrap yarn finger stops while the cylinder revolves and until patterning is accomplished.



Three of the many interesting Komet wrap-type patterns now obtainable on the new Komet Wrap Machine. Note combination of Komet ribs with clocks; also, all-around embroidered patterns combined with clocks. Elastic-top slacks illustrate fabric evenness achieved with the new Rubber Furnishing Device.

S·W

'TOPS' FOR IDENTIFICATION AND PROTECTION

KAUMAGRAPH MARKING

In sea-diving or in product selling, success has a common requisite . . . namely sustained communication. The diver has it with his helmet linking him to land. Your product can have it with Kaumagraph Identification . . . quick, easy reproduction of your trademark, name or symbol . . . clean outstanding marking that protects your name, identifies your product; quickly and effectively communicates its quality at point-of-sale.

Whether your product is textile, leather, rubber or one of the modern synthetics, Kaumagraph marking can give it the essential 'life-line' between counter and customer. Let a Kaumagraph Man show you . . . and serve you.

- Dry Transfers
- Prestomark Labels
- Embossed Seals
- Transfer Irons
- Stamping Inks
- Lithography for Box Wraps
- Labels • Displays
- Booklets and Folders

Real savings in time and money are made in many mills by the use of Kaumagraph Dry Transfer marking in conjunction with processing operations. Let's help determine the practicality of this for you.

KAUMAGRAPH

Identification Headquarters Since 1902

KAUMAGRAPH COMPANY, WILMINGTON 99, DELAWARE

EMPIRE STATE BLDG., NEW YORK CITY • *Representatives in Principal Textile Centers of the World*

steaming than has heretofore been obtainable.

4. Due to the fast traverse employed during the twisting of the yarn, there is no chance for the yarn to lap over, or fall off the open end of the bobbin, nor is there any opportunity to get "underwinds" at the cone shaped head.

5. A knock-off motion has also been incorporated in this new take-up bobbin development. Should the end be broken, or when the bobbin becomes full, the bobbin is automatically lifted from the cork roll.

6. The twister can be made to accommodate a new permanent type durable molded plastic bobbin, or a paper base "expendable" bobbin for use in shipping or storing the yarn.

Fletcher Works, Glenwood Ave. & Second St., Philadelphia 40, Pa.

For additional data, request item E-202, using business reply card on page 230.

Spring Retail Sales May Set Trend

There are a number of strong underlying factors in the knitwear field. This is claimed by veteran observers who point out, however, that contrary developments are not to be ignored. Key people in this line cite the strong points as follows:

1. At all levels, on-hand stocks of manufacturing materials and finished goods are small. This seems especially true of textiles and apparel. Some retail outfits have held their stocks so low that they have lost out on sales recently, it is stated.

2. Prices asked for replacement materials and merchandise, in the main, are regarded as low. In nearly all categories, prices now show the effect of attrition from stiff competition, it is asserted. Also, at the present level, textile-garment prices seem likely to become relatively well stabilized.

3. Quality of manufacturing materials and end-goods has visibly improved. It doesn't take an expert to see that knitwear, now easily available for the retail trade, is of better quality than a year or six months back. Many of the garments are more expertly styled than ever before. Where the

HERE'S THE COST-CUTTING TWISTER FOR PERFECTLY BUILT TAPERED PACKAGES!

Hundreds saw the *New U. S. Acme Tapered Package Twister* in operation at the Knitting Arts Exhibition . . . several mills are now reaping its benefits—higher spindle speeds; inexpensive tubes replace troublesome, expensive take-up shafts; constant and positive tension while twisting and sizing—*with stepped-up production and better quality at the low operating costs for which U. S. Acme machines are noted!* It's another "first" from U. S. Acme!

ILLUSTRATED BULLETIN NOW IN PREPARATION write for your copy!

U.S. TEXTILE MACHINE CO.

700 Gilligan St.—Scranton 8, Pa., U.S.A.

color element enters in, the selection is in line with the latest dictates of fashion. Many new angles have been introduced, including shrink and crease resistance, etc.

4. Notwithstanding more unemployment during March and earlier, consumer expandable income remains high and a substantial part of public buying power is expected to go into knitwear and allied "soft" goods. It is to be recognized, observers say, that over the last few years, many families have raised their living standards.

5. Retail dollar-volume so far this year has been termed "spotty," but actually, sales of textiles and garments have been fairly large. Of prime importance to knitwear producers is the gain in unit-volume of retail distribution in a number of outstanding lines.

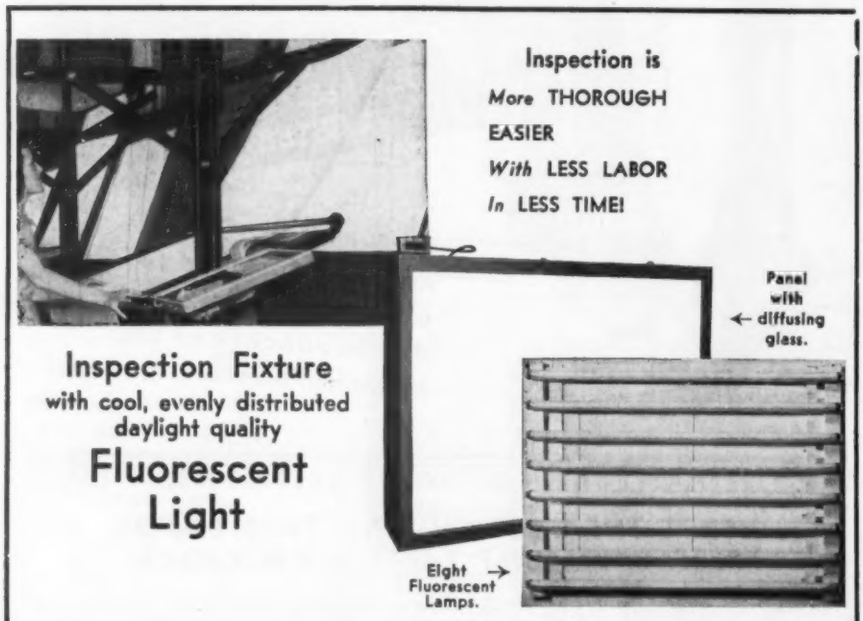
Hosiery Men Challenge FTC Rulings

Representative hosiery manufacturers and dyers are at odds with rulings lately made by the Federal Trade Commission as to what should be regarded as an "irregular." For example, it is held by industry authorities that a "mender" in the leg or welt of a full-fashioned stocking, if not noticeable, still qualifies that stocking to be classed as "irregular." There seems to be a general agreement in this respect, however much the producers may differ as to other phases of this topic.

It is conceded that there may be minor visible defects in the welt, sole or seam, including "fish eyes," which are caused by the melting-out in the dye bath of a piece of sizing, creating what looks like a distorted stitch or a small hole in the stocking. The mill men take issue with that part of the Commission's regulations that a mender on any part of a stocking constitutes a "second." It is contended by some manufacturers that the FTC rules were drawn up before use of nylon yarn became so widespread in the hosiery field.

Therefore, it is contended, the present FTC rules do not take into account that misformed stitches are far more likely to show up in nylon than in silk constructions. Accordingly, the feeling is that the FTC rules are unrealistic in defining irregulars in nylon goods.

In some quarters it is believed that a mender in the corner of the looping, if properly adjusted, should enable the stocking to be labeled "first quality." Only a few months back, it is admitted, the large majority of knitters would have paid little attention to strictness by FTC, but since demand for hosiery sagged, it is a different story. Variance of opinion as to correctness of FTC definitions also concerns the relative grading of slight off-lengths, seam imperfections, etc. The usual theme is "there can be no such thing as a perfect stocking," and the Commission cannot expect to overcome the element of human fallability in hosiery inspection.



A strong, durable cabinet into which are set eight 40-watt fluorescent lamps behind a diffusing glass panel*. Ample and evenly distributed light of daylight quality—not hot or glaring—permits careful, comfortable inspection of every square inch of cloth. Better than daylight, incandescent or mercury vapor because the light is cool, diffused and evenly distributed over the entire width of the cloth.

*Or in a larger size with eight 72" Slimline Fluorescent Lamps.

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Tel. 0446 4 Jefferson Avenue, SALEM, Massachusetts

MAKERS OF FLUORESCENT AND INCANDESCENT LIGHTING FIXTURES AND WIRING DEVICES

Knitters Widen Sway Over Yarn Costs

The knitting trades, as well as a good many weavers, lately have been able to extend their domination over market yarn prices and terms, mainly by continuing to order replacements on a short-period basis. Synthetic yarn rates have joined the downward procession that was begun months ago in cotton sale yarns. It now appears likely that more attractive prices for wool and worsted knitting yarns may be in the making. It is admitted that during early spring, the confusing aspects of general business conditions prob-

Good Knitting is always

in style. And whatever type of knitted merchandise you produce, good knitting is the basis on which sales appeal is built. Torrington Needles, recognized throughout the knitting world for their precision-made quality, can be an asset to you in keeping your knitting standards high and your production costs low. Make it a rule in your mill to insist on the needles in the Red and Green box.

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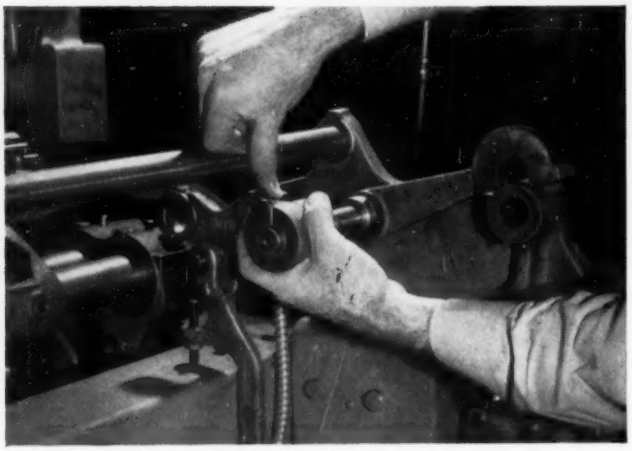
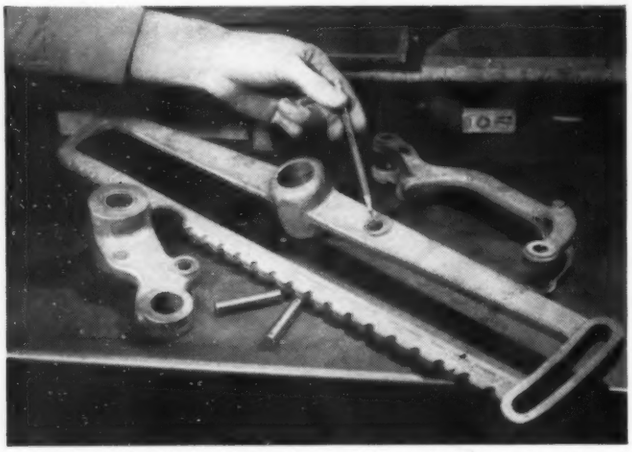
There's a **TORRINGTON** Needle for every type of Knitting!

Torrington Needle Bearings Aid Production of Quality Fabrics in Reiner Tricot Machines

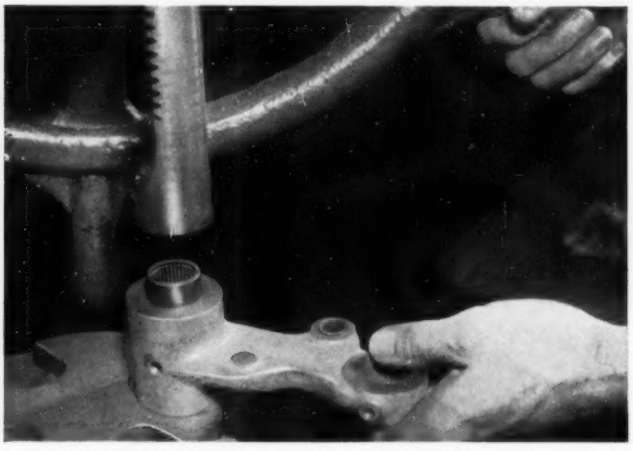
High fabric quality, steady production and economical maintenance are outstanding features of high speed Tricot Knitting Machines built by Robert Reiner, Inc. In the balanced floating controls, 8 Needle Bearings contribute to uniformity of knitting.



The balanced floating control design, with accurate response provided by the Needle Bearings, assures that the cloth will knit uniformly over the entire knitting length. Smooth operation results from the low friction coefficient of these high-capacity bearings.



The use of Torrington Needle Bearings helps keep the design simple, requiring only the elements shown here. An accurately machined bore serves as housing, and a hardened and ground shaft as the inner race. No spacers or retainers are needed.



Installation of Needle Bearings is an easy, quick operation. Each bearing is installed with one stroke of the arbor press, taking a firm press fit. These features mean economy in design, fabrication and assembly, providing anti-friction efficiency at low cost.

Knitting action of the Reiner Tricots is further aided by the use of 32 Torrington Needle Bearing Cam Followers, 2 NCS Needle Bearings supporting the lower beam ends, and 9 Spherical Roller Bearings on the cam shaft. Let our engineers help you apply Torrington Bearings to improve the performance and service life of your textile equipment. Write us today. THE TORRINGTON COMPANY, Torrington, Conn., or South Bend 21, Ind. District offices and distributors in principal cities.

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller

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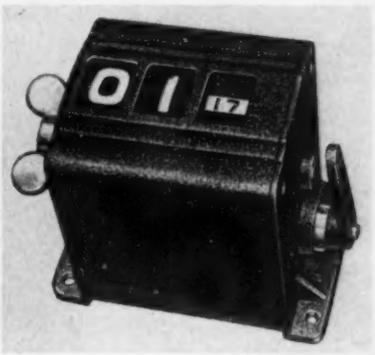

NEW HOSIERY COUNTER

A new "Dozens" counter is designed for use in hosiery and glove mills. It gives inspectors a ready and accurate means of counting individual stockings and dozen pairs, and may be either hand-operated or adapted for machine actuation.

The device should be useful at inspection, doffing, or on the knitting machine itself, according to the manufacturer.

Veeder-Root, Inc., Hartford, Conn.

For additional data, request item E-205, using business reply card on page 230.

ably will persist. On the other hand, spinners have their basic costs to consider. Due to stress of competition, they appear at this writing to have granted all the concessions they can, on the basis of present volume of business. To illustrate:

In the wool and worsted yarn markets, sellers have to wait longer for new contracts, mainly because of conditions prevailing outside of their special sphere of activity. Tightness of the supply of desirable types of raw wool, and consequent high prices, have helped to keep wool and worsted yarn rates at a level which buyers deem too high. Because volume of trading in such yarns has declined, the spinners' quotations are often regarded as nominal, though they continue to be based on costs.

Cotton spinners also claim they have reached their lowest limits of cost reduction. Recently a good

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WESTON
All-Metal Thermometers
Rugged, all-metal construction . . . stainless steel stems . . . bold, readable dials . . . accuracy within 1% over the entire scale—all add up to the answer to industry's toughest temperature measurement requirements. Choose a dependable WESTON thermometer from a variety of types, stem lengths and scale ranges. Call your jobber, your WESTON representative, or write for Thermometer Bulletin . . . WESTON Electrical Instrument Corporation, 659 Frelinghuysen Avenue, Newark 5, New Jersey.
CONTACT MAKING models for alarm or control purposes.
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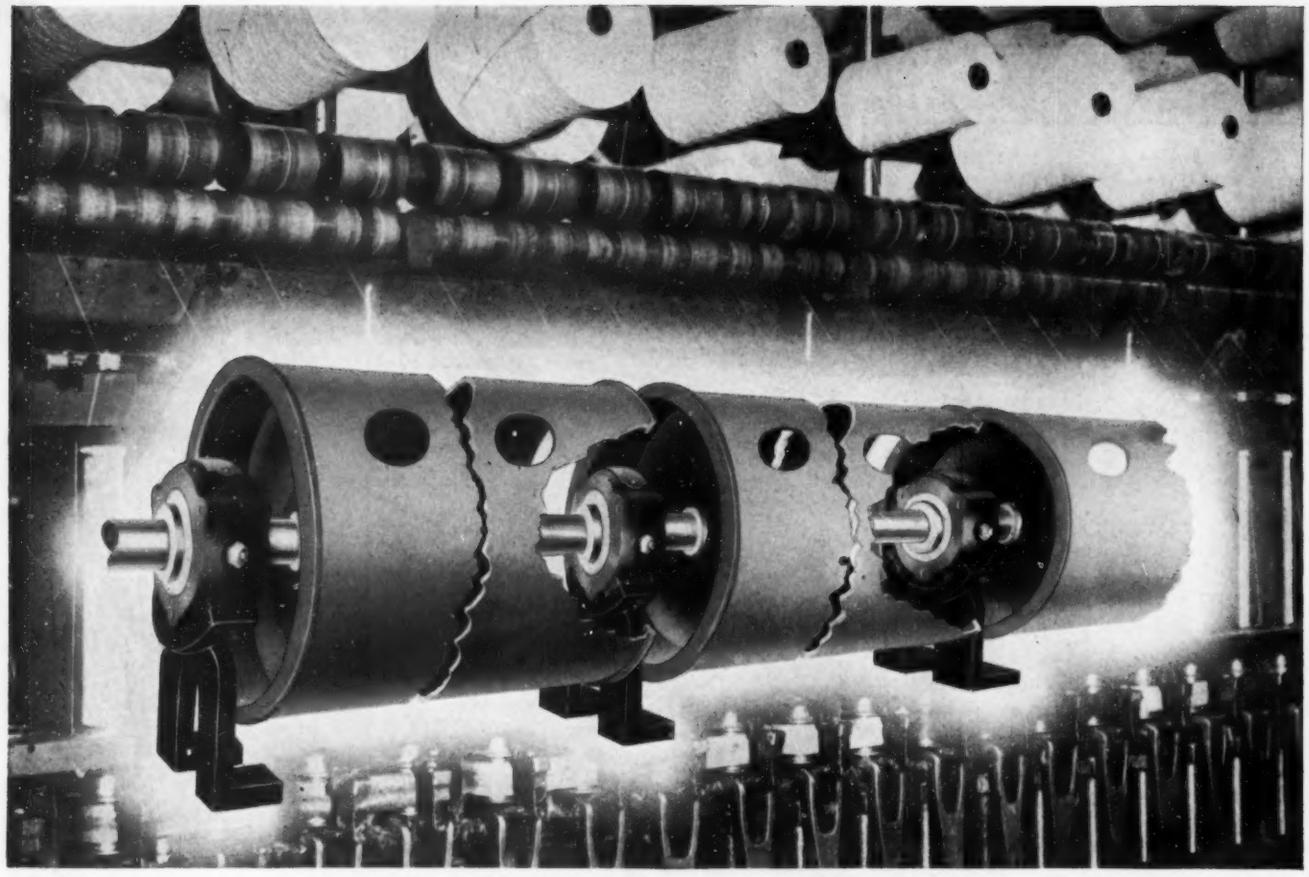
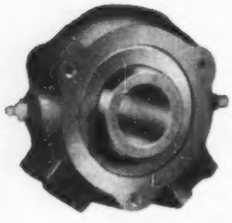
WESTON Instruments



MORE PRODUCTION EFFICIENCY LESS POWER LUBRICATION REPLACEMENT



This "four-in-one!" bearing unit, with the addition of easily mounted fittings and brackets, is readily adaptable for installation at **outboard — head end — intermediate —** and **foot end** positions.

. . . With Southern States Ball Bearing Cylinder Unit

THE installation of these units on your cylinders means to you higher cylinder speeds — less power consumption — simplified lubrication problems and smoother operation through reduction of friction, heat and wear. Southern States Equipment Corporation's cylinder bearing is equipped with an SKF self-aligning double row ball bearing with extended race, designed specifically for the textile industry. Increase the efficiency of your old frames with this comparatively simple, low cost installation of ball bearing units on your cylinders.

Southern States Equipment Corp.

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Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

many sources have quoted prices representing bare costs; but still the cotton yarn demand has not picked up to any considerable extent (though customers now can contract ahead advantageously) when compared with average yarn rates at which they operated heretofore. In the synthetic yarn field, where there are relatively few large suppliers, price cuts lately have been volunteered, mainly in order to sustain demand at a level above the "break even" cost stage.

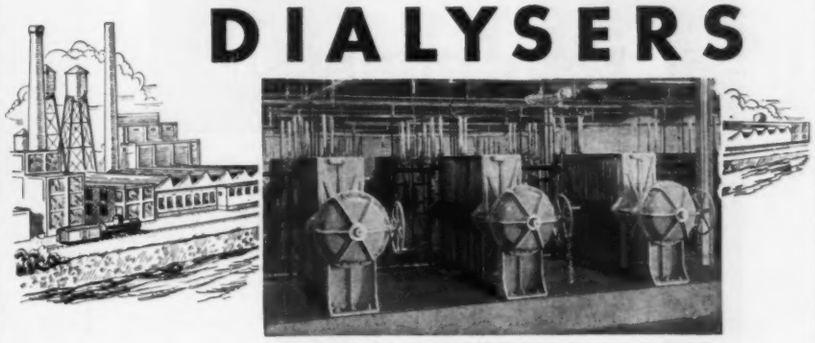
Foster Small Outlets, Wholesalers Advise

The women's hosiery industry must in the long run depend partly on the small retail stores scattered over the country for enlarged distribution, according to spokesmen in the wholesale field. These spokesmen contend that in the aggregate a substantial volume of stockings can be handled annually in suburban and rural stores, if the little merchants are afforded some of the advantages that long have been granted to department stores, mail order houses and the variety chains. It is asserted that the history of retail disposal of hosiery over recent months has shown that any fears of a scarcity of this item have been permanently dissipated, as far as the buying public is concerned.

Likewise, it is stated, the competition now under way among the larger retail outfits, to sustain volume on any basis that seems convenient, probably will lead part of the public to adopt a long-trend attitude of waiting for the latest price cuts before buying, and of refusing to "stock up" with hosiery as long as the retailers appear unable to make up their minds as to what hosiery is worth. Meanwhile, it is explained, production figures from hosiery sources seem to indicate that more merchandise will continue to be offered than the retail outlets have shown they can dispose of. One authority said:

"The women's hosiery industry is like a patient suffering from shock, who must emerge from

WEBCELL CONTINUOUS
DIALYSERS



TYPICAL LARGE BATTERY INSTALLATION OF WEBCELL DIALYSERS IN VISCOSE RAYON PLANT FOR THE RECOVERY OF CAUSTIC SODA

DIALYSIS MAY BE THE SOLUTION OF YOUR PROBLEM TO AVOID STREAM POLLUTION *and* TURN LIQUID WASTE INTO PROFIT

Industries employing certain liquid solutions in their process are confronted with the problem of stream pollution in the disposal of waste. Dialysis may be the solution for you, as it has for others, to a low cost method of preventing stream pollution —plus the saving of the cost of a neutralizing agent and a profit from waste through recovery.

The process is now in profitable operation in many fields for the:

RECOVERY OF ALKALIS & ACIDS

REMOVAL OF ACIDS, ALKALIS OR OTHER NON-WANTED MATERIALS

PURIFICATION OF SOLUTIONS

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MADE OF LUCITE — The action of transfer and separation can be clearly seen throughout the experiment

LABORATORY MODEL

Colleges, Universities and Research Laboratories are now using the Webcell Laboratory Model for the study of dialysis and are conducting experiments in Recovery, Removal, Purification and Separation of solutions. The results obtained can be closely translated into terms of the expectancy from the larger production units.

For further information, write for bulletin 5B.

BROSITES MACHINE COMPANY INC.
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his befuddled condition before he can begin to regain his normal balance. Both the manufacturers and the hosiery wholesalers ought by now to realize that it is time to forget the 'rosy' years and reconcile themselves to more normal objectives. While we still cannot control the price of our products, we can widen demand by extending our service to include the smaller retailers, as well as the big volume distributors."

It is claimed by wholesale spokesmen that this group of middlemen already holds the key to more efficient hosiery disposal and broader markets.

New Wage Basis Held Moderate

In the knitwear field, employers have given plenty of attention to the movement in Congress to raise the wage minimum from 40 to 75 cents per hour, and to make other adjustments in the Federal wage-hour regulations. It has been surprising to some observers that leading spokesmen for organized labor express approval of the proposed new 75-cent level, though previously they claimed a minimum of $1 an hour was not too high. The let-down of employment in this industry, it is explained, had a lot to do with the revision of union leaders' aims in this respect.

Speaking for conditions in its own line, the hosiery workers' union has come out strongly in support of the compromise House Bill 3190, and the following explanation is offered:

The hosiery industry needs outside help. There are approximately 600 manufacturing units, and the business is highly competitive. The average hosiery plant employs less than 60. Individual manufacturers presently find themselves more or less helpless in the face of price and wage cuts by other employers, all competing for a market which lately has been too circumscribed to support full output by the entire industry. At the same time, it is added, the relatively small capital needed makes

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9 out of 10 companies can make important savings by packaging with Acme Steelstrap. Over 45,000 shippers have proved this fact.

Whether you box, bundle or bale *your* textile product—whether you ship in single units, carloads or ships' cargoes—you too can save:

- **on time, labor, and materials needed for packaging**
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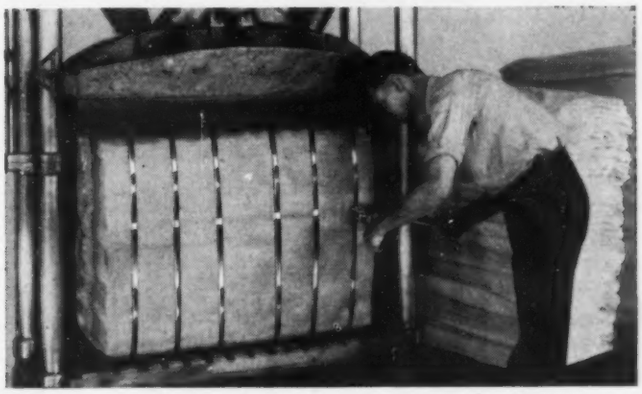
For Acme Steelstrap binds shipments neatly and securely. Makes them easier to load and unload. Gets them to their destination in perfect condition. And does it all simply . . . quickly . . . economically.

Why not find out how Acme Steelstrap can save money for your company? Mail the coupon today.



Baling textiles with Acme Steelstrap saves space, time, and money.

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The efficiency of HYDROCOP and 3B SOFTENER, the famous Laurel twin Emulsions on your cotton yarns—combed and carded—will surprise and please you. They properly condition dyed, bleached or natural yarns; speed twist-setting and produce even-running, more easily knit yarns. Never become rancid. Do not discolor yarn on standing. Simple to apply over roller throughs on cone winders, quilling frames or twisters. Improve your yarns as other leading knitters do—with Laurel Emulsions. Send for trial order and formula for use.

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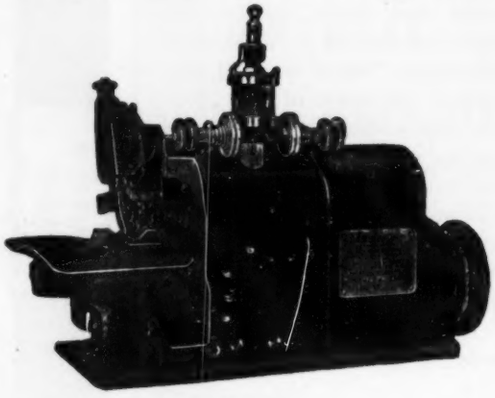

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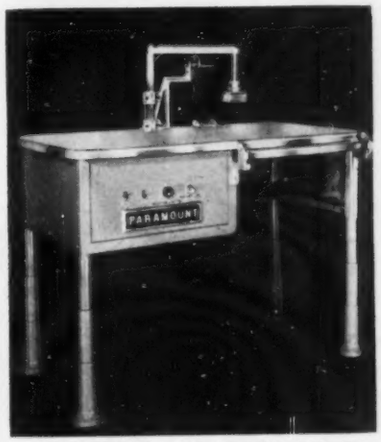


MACHINE FOR TRANSFER APPLICATION

This transfer application machine features all-metal construction with stainless steel top. It is available in sizes 30" x 48" for women's stockings and 24" x 48" for half hose and anklet transfer application.

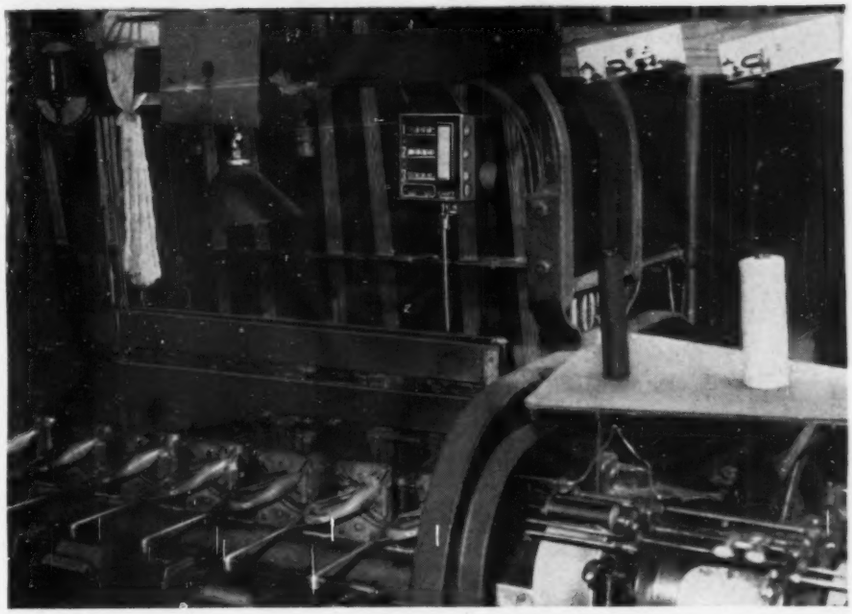
A self-levelling iron overcomes uneven transfer impressions caused by any slight unevenness in the stack of goods, according to the manufacturer. The operator can adjust speed of machine by means of the selective speed control.

Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago, Ill.

For additional data, request item E-204, using business reply card on page 230.

it easy for new firms to enter the hosiery field.

In an industry already experiencing overproduction, it is contended, a legal minimum of 75 cents per hour for labor will "prevent the bottom from dropping out," by protecting the established manufacturers from new inroads of employers who are less scrupulous. While it is claimed that in view of the continued high cost of living, a higher U. S. wage minimum might be more just to the employee, it is admitted the proposed 75-cent minimum will furnish a better wage floor and thus prevent a spread of alleged "cut-throat" wage cutting in the hosiery industry.



Loom Pick Counting

on a

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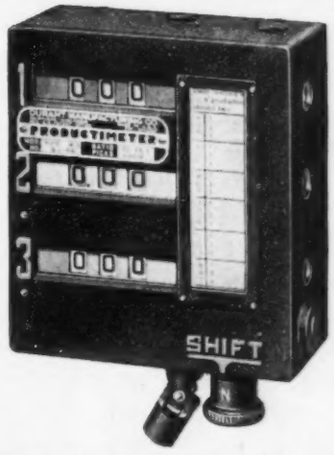
3 SHIFT

PICK COUNTER

Tamper-proof . . . provides a dependable basis for wage payment . . . results in maximum production and employee efficiency. Also available in 1-Shift and 2-Shift models.



Productimeters designed especially for textile processes have many exclusive features. Clear legible number wheels, immune to moisture. Stainless steel and non-ferrous metals, as used in wheel parts and overall design of Productimeters, insure long wear and lasting satisfaction. Entire counter is rustproof and dustproof.

Tamper-proof resetting mechanism operates lock shutter . . . prevents any attempt to change counter reading. Only actual loom production by weaver can be registered.

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AN EYE ON THE KNITTING MILLS

Gotham Hosiery Co., Inc., New York. N. Y., women's full-fashioned hosiery, has concluded arrangements for the purchase of **Mission Hosiery Mills,** Los Angeles, Calif., manufacturers of similar hosiery under the trade name of Hollyvogue-of-California. The mill will continue in operation without change and will be known in the future as Hollyvogue-of-California Division of the Gotham company. A. H. Wittenberg, Jr., heretofore president of Mission, will be manager of the division.

Na-Rene Hosiery Mill, Inc., Quakerstown, Pa., has arranged for removal of the knitting mill to a one-story building in Trappe, Pa., where increased production facilities will be provided.

Norine Hosiery Mills, Asbury Park N. J., women's hosiery, have acquired a one-story building in York, Pa. and plan to establish a new mill there.

Steinberg Bros., Brooklyn, N. Y. and A. A. Empire Corp., New York, N. Y., have jointly purchased the machinery, equipment and inventory of the **Bradley Knitting Mills, Inc.,** Delavan, Wis. The Bradley name and trade marks have been acquired by Serbin, Inc., and the L. N. Gross Co.

Cooper, Wells & Co., hosiery manufacturer in St. Joseph, Mo., has transferred the knitting operations to the company's mill in Decatur, Ala.

Cherokee Mills, Inc., infant's hosiery, is a new concern in Centre, Ala., planning the construction of a mill to cost approximately $10,000. The project is under the supervision of J. H. Garrett.

Plans have been completed by **Burlington Mills Corp.** to double the size of its Royal Oak and Town House hosiery plants in Bristol, Va.

Wanner Textile Company, Winchester, Va., has begun operations in a building, now nearing completion, for the manufacture of underwear for men, women and children. John J. Wanner is president and manager.

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● Clinton Textile Starches are scientifically manufactured and guaranteed for unvarying uniformity and pH control. Clinton Starches give your warp the necessary body, strength and pliability that means quality weaving every time. Reduce loom stoppage and increase production with Clinton Textile Starches. For years Clinton has been a leader in the production of starches for all textile purposes.

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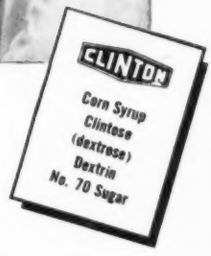
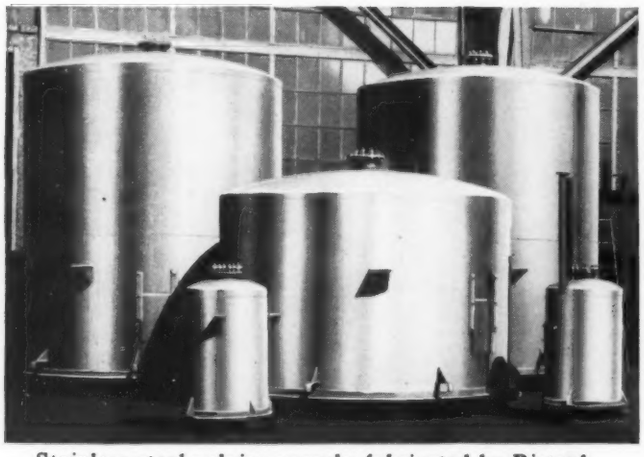
You'll find our staff of highly trained technicians helpful and profitable in solving your sizing problems. Without obligation, write or call Clinton Industries, Service Laboratory, Clinton, Iowa.

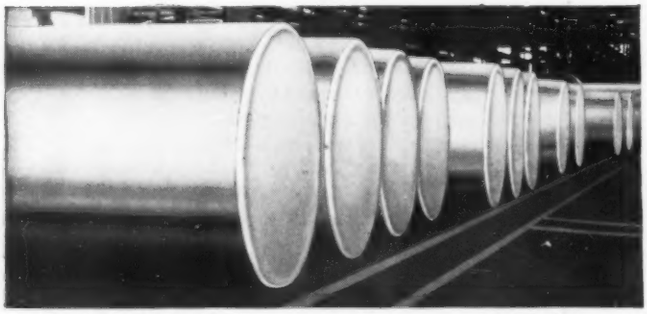


Clinton Industries, Inc.

CLINTON, IOWA



Stainless steel pulping vessels, fabricated by Birtank for a leading soap manufacturer.



A view of the tank assembly line at our North Birmingham plant. The tank rolls accommodate vessels up to 30 feet in length.

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Discussion on Warp Sizing Practices

Editor's Note: The following discussion on sizing practices and techniques, in this country and abroad, was taken from correspondence between Dr. Paul V. Seydel and an enthusiastic follower of his series on "Cotton Warp Sizing," which appeared in TEXTILE INDUSTRIES.

Dear Dr. Seydel:

Many thanks for your welcome and most interesting letter. I have read it through many times and find it very practical, which is of the utmost value to any mill manager.

Your method of a boil pipe in size box is good. [Ed. Note: See illustration on page 175.] I have tried it, but I put the holes about 3 inches apart; same in cooking vat or kettle, as you call it, and I find a noticeable difference in the boiled starch paste.

It keeps firmer and is more strengthening to the yarn, thus better weaving, less likelihood of a soft beam, and I find on your method less starch can be used to obtain the same result.

I have found, as per your letter, 8% of tallow (Australian) is good for our heavier cloths (86 x 76, 30s warp, 40s filling in this mill and 10% in our lighter qualities).

We have a highly twisted yarn. I find no benefit in using over 10% tallow. Your explanation of the fermentation of the sago starch, on standing for several days, was most interesting.

Excerpt from letter referring to fermentation: "The liquifaction of the starch which you mentioned is evidently due to fermentation upon standing, which is a result of a lack of sufficient antiseptic to prevent this fermentation. The addition of enough antiseptic to prevent fermentation of a starch solution would be impractical. Starch solutions ordinarily do not stand for that length of time, and the cost of that much antiseptic would be wasted in most cases.

"Another reason we feel that you got comparatively good results with this liquified starch is that you may have been using too heavy a starch mix with regard to viscosity. In this case when some of the starch is broken down you would naturally get better weaving results."

I see your point in this and fully agree with you on your method. A weaker mix would do equally as well.

The tallow I used in England was Australian and some English, both being about equal. I agree with you when you say tallow is not the best softener. Certain mills in England have gone off it and are using an emulsified softener.

There are certain cloths made in England for shipment to the East. These are neither bleached nor dyed, but they are passed through the calender rollers. Generally these cloths have to be made to a certain weight, in many cases from 15% to 20% size.

The buyer will stipulate the weight on his contract in Manchester, or where it is bought. I have made cloth, in India for the Indian market, which was only calendered, sized 15% to 20%, all for cheapness.

The average Indian worker does not worry about washing them, just wears them till they fall to pieces.

With regards to the size box on slasher sizing machine, one mill manager in England I know is using a squeezing roller, 750 lb. in weight. I actually saw it working. His idea is that there is a certain amount of air in every thread of yarn and this air must be squeezed out to enable the yarn to pick up the size.

If the air is not squeezed out, less size will be picked up and penetration of size into the yarn will be much less. I saw this working and also saw the air bubbles or what appeared to be air bubbles running down the copper roller after being squeezed out in large numbers by the top roller.

He uses this roller for coarse counts, say 18s warp and every other count up to 80s and 90s

$100 for Best Kink or Short Cut

(Ends July 15, 1949)

ONE HUNDRED dollars will be awarded the contributor who furnishes the most helpful short cut, kink, time-saving device, cost-cutting suggestion, or quality improvement idea by July 15. The contest may be entered by any reader of this magazine, but the kink must not have been published elsewhere.

In sending in ideas, give complete description and where possible accompany description by sketch. Finished drawings are unnecessary. Participants are not restricted as to number of kinks submitted for consideration.

Only one award will be made, but non-winning contributions will be paid for at regular rates if used. Advise in original correspondence if participant's name may be used, or if contributor number is preferred.

All entries must be postmarked not later than midnight of July 15, 1949. Address: Editor "Textile Industries," 806 Peachtree Street, N. E., Atlanta 5, Georgia.

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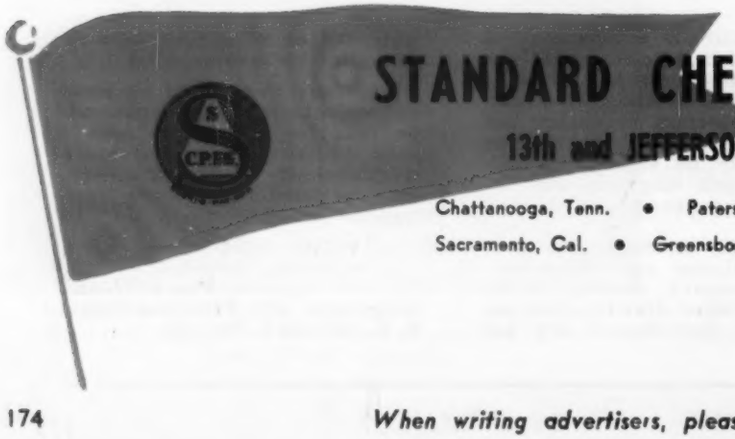

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warp. In England only one roller is used for pure sizing as a rule. Most machines today are only made with one copper and squeezing roller. Some squeezing rollers are made with a brass sleeve on them. No painting is required. Some of the rollers have copper sleeves on, some all cast iron, painted, and we put a sheet of asbestos about ⅛" thick around the roller. This is cut so that the ends just meet or may allow ⅛" so that when roller is down the ends finally come together and there is no overlapping of the asbestos. Then flannel is put on top. We use three lengths of four yards each. The man with the heavy roller used three lengths of six yards each.

In England we work the immersion roller set very close to the copper roller. When these rollers are center to center we allow about ⅛ to 3/16" between them. I mean when center of immersion roller is on a level with center of copper roller.

In your articles I notice you show immersion rollers set some distance away from copper roller, almost as far as possible, as shown in article for May 1947.

[The editors are inclined to agree with this CONTRIBUTOR. The drawing referred to is reproduced here. It was made with the rolls farther apart relatively to prevent crowding the fine details in illustrating the point.]

I am working on your setting in this mill and find it quite good. Also I boil heavily in the back side of the size box (nearest to cylinder), also boil as hard as possible (without splashing size up on squeezing roller) in front side of size box (where the immersion roller is) where the yarn enters the box.

Our immersion rollers are about 5" in diameter, and I generally run with about half of the roller in the size only, not all of it in the size. It is my opinion that if the roll is only half in the size, there will be less strain on the yarn. Do you agree with me on this point?

What depth would you advise running the roller? I notice in your sketch you show the setting of the immersion roller very low down in size. This will keep the sheet of yarn (all the threads) tight, but will put more tension on due to the angle in which the yarn has to run. Do you prefer the roller so low?

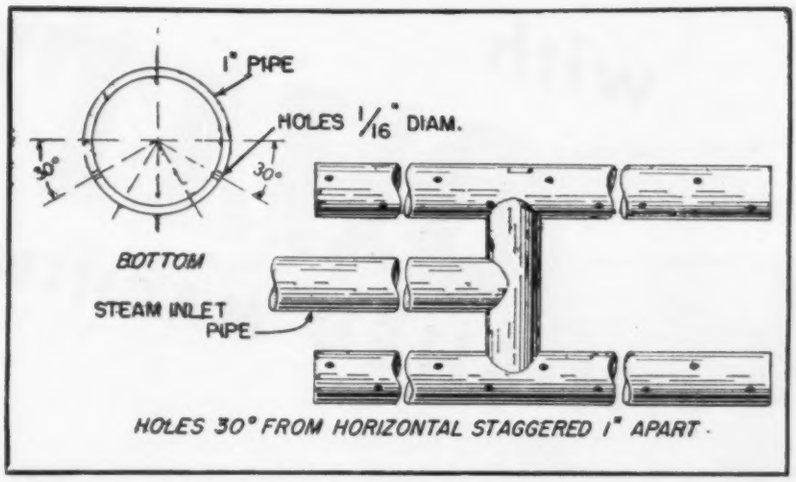
What depth of size in the size box would you advise? I generally run to the depth of half way up the copper roller; by this I mean, bottom half of copper roller is in the size. I find that if it is any higher, due to boiling, the size may splash up onto the squeeze roller.

The accompanying sketch should help to express what I mean. [See illustration on page 177.]

I have given extra distance between immersion and copper roller (in drawing only) to fully illustrate my point. The line through copper roller shows depth of size in size box the way I try to keep it. You will see, half the sheet of yarn is always in the size and the other half out during its passage between the two rollers.

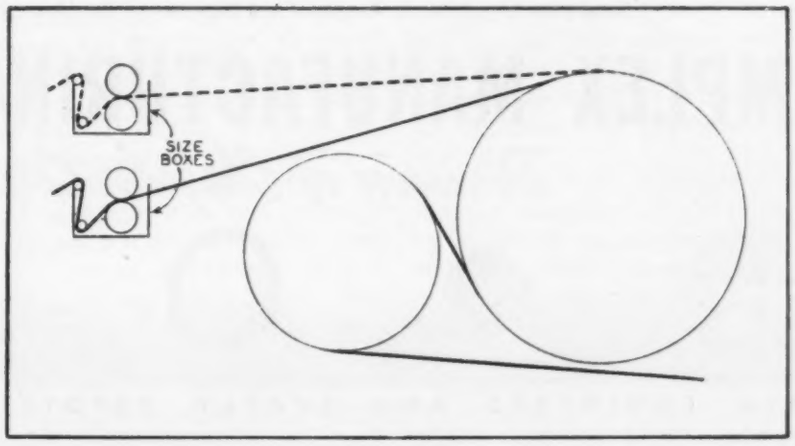
It is between these two rollers that I keep the size boiling so that I can see the steam bubbles rising on top of the yarn as it leaves the size.

In this way I never get a soft beam. With a 9% size I always feel



From "Cotton Warp Sizing," which appeared in "Textile Industries," March 1948, page 137. "Recommended construction for steam coil for size box. Ends are plugged and capped. Center section may be three T joints, or welded. All pipes standard 1-inch, centered under copper rolls, and should come practically to ends of size box."

The immersion rollers shown on this drawing were placed farther from copper roller for the purpose of clarifying the point. This illustration was reproduced from "Cotton Warp Sizing," which appeared in the May 1947 issue of "Textile Industries." "Where beams of similar but different yarns are slashed together, two size boxes may be used in tandem, with one set of yarn going through a normal size mix and the other through a tinted mix."



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FIELD ENGINEERS AND SUPPLY DEPOTS IN PRINCIPAL CITIES

I have a strong well sized yarn and a good weave. I am sizing on 86 x 46 construction, 30s warp 40s filling with a 11% to 12% size with good results.

Do you advise an actual boil at "point where boil-bubbles appear"? Some people prefer to keep as near the boil as possible without showing the steam bubbles in order not to disturb the threads. I like the actual boiling.

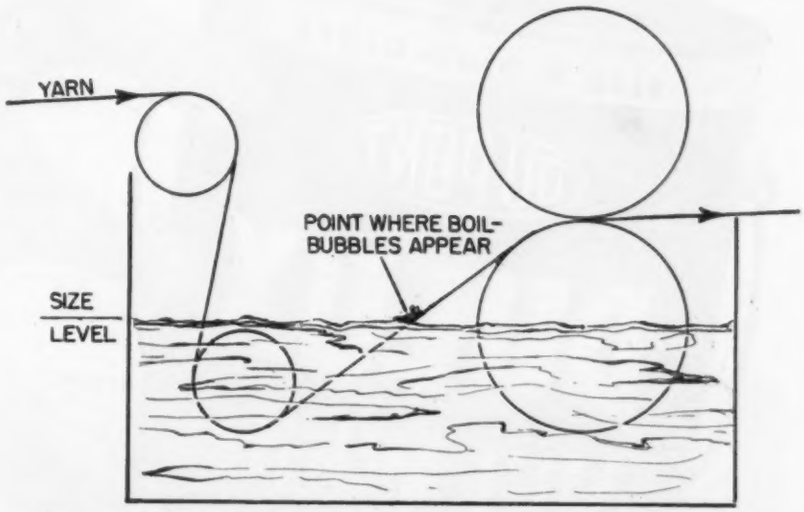
My three points are depth of immersion roller, depth of size in size box, active or whatever type of boil you advise.

In summary, I can safely say that any mill man following your articles and accepting your advice will find his work improving. At the moment trading restrictions in Pakistan are very difficult, but I am keeping your name and products well in mind for when the opportunity arises.

I hope my letter is not too long and beg to be excused for encroaching on your valuable time and good office. Your advice is valuable to me and your letter I treasure. I shall always keep it.

Thank you ever so much for entertaining my letters.

Sincerely yours,
CONTRIBUTOR NO. 8141
(India)



"It is between the rolls that I keep the size boiling so that I can see the steam bubbles rising on top of the yarn as it leaves the size."

Dear Contributor No. 8141:

Thank you very much for your kind letter of November 22nd. The remarks you made about sizing in your country were very interesting and of course it pleased me very much to hear that you liked my articles in TEXTILE INDUSTRIES.

In answer to several of your questions and remarks, we have also seen squeeze rolls of 750 pounds weight. We have, in this country, squeeze rolls that are loaded by air pressure being exerted on the axles of the rolls so that as much as 1000 pounds of weight can be used. We find this to be particularly effective where synthetic rubber covered squeeze rolls are used.

With regard to the depth of the size in the size box, we agree with you that it should not be much above the center of the copper roll. However, we find it very important that the copper roll be at least partially immersed in the size, otherwise you may run into difficulties with soft warps, and the copper roll may cool off too much to give the proper results in sizing.

We find that if you do not have a constant level device, and your slasher operator is too busy to pay close attention to this, that it is better to have the size level too high than too low.

With regard to the distance of the immersion roller from the squeeze roller, we normally set our immersion roll about as close to the first squeeze roll as you do. Incidentally, we have two sets of squeeze rolls in practically every size box in this country. I believe the slasher designers believe that they get additional penetration into the yarn and therefore greater pick-up of size when two sets of squeeze rollers are used.

With reference to the depth of the immersion roller in the size, our tests have shown that it makes very little difference in the tension on the yarn or the amount of pick-up in the size whether you set the immersion roller low or high. We like to caution operators not to set the roll too low. If this is done there is a great tendency to pick up trash, dirt, and lumps of hard size that otherwise settle near the bottom of the size box.

We find that where there is any tendency of rolling of the yarns due to slack tension, if the yarns touch the immersion roll before getting down into the size, or just about at the size level, we do not have as much rolling as if they have dipped far into the size before touching the immersion roll. However, under normal conditions we prefer to keep the immersion roll about two-thirds or three-fourths immersed in the size batch.

I understand that you keep the size boiling in the size box. We find that your practice is very similar to what we recommend. The size should be stirred enough to prevent formation of scum on the surface of the starch mix which can cause undesirable hard size spots on the warp. Much more boiling than this is not necessary.

If the size box is heated properly, the temperature in the box will register between 204 and 208 degrees F. Under no circumstances should this temperature drop below 200. As you mentioned, too much active boiling may disturb the threads, thus causing rolling of the yarns which may cause broken ends when the rolled yarns hit the lease rods in front of the slasher.

We were very much interested in your remarks on the squeeze rolls. Usually we use painted iron rolls; however, I think your idea of covering them with copper or brass sleeves is very good. We have never tried asbestos covering in this application, but if we find

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Why not talk over your maintenance painting problems with a Du Pont expert today? To get in touch with him, write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. T.I.-95, Wilmington 98, Delaware.

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some customer with an experimental nature we may suggest that to him and see how it turns out.

Incidentally you may be interested to note that W. R. C. Smith Publishing Company, publisher of TEXTILE INDUSTRIES magazine, intends to publish my series on "Cotton Warp Sizing" in the form of a book within the next few months. If you or any of your acquaintances are interested in this, you should get in touch with the W. R. C. Smith Publishing Company, 806 Peachtree Street, N. E., Atlanta 5, Ga.

With best regards and thanking you again for a most interesting letter.

Sincerely,
PAUL SEYDEL, D. Sc.

Choked Trumpets at Spinning

Question Briefed: *We would like to have the opinion of your readers as to the effects of choked trumpets on spinning frames processing cotton.* (CONTRIBUTOR No. 7471, *December*, 1947.)

EDITOR TEXTILE INDUSTRIES:

We have had trouble with choked trumpets in the past, as some of our frames were originally designed to spin very fine numbers and, consequently, the trumpets were unusually small. When we got into this trouble several years ago we enlarged the trumpets to a size which would be in keeping with the hank roving which we were running, and since that time have not had any appreciable trouble with choked trumpets.

Even though our trumpets have been enlarged, we still have some lint accumulate in the trumpets, but this has never been a serious problem.

CONTRIBUTOR No. 7992

◆

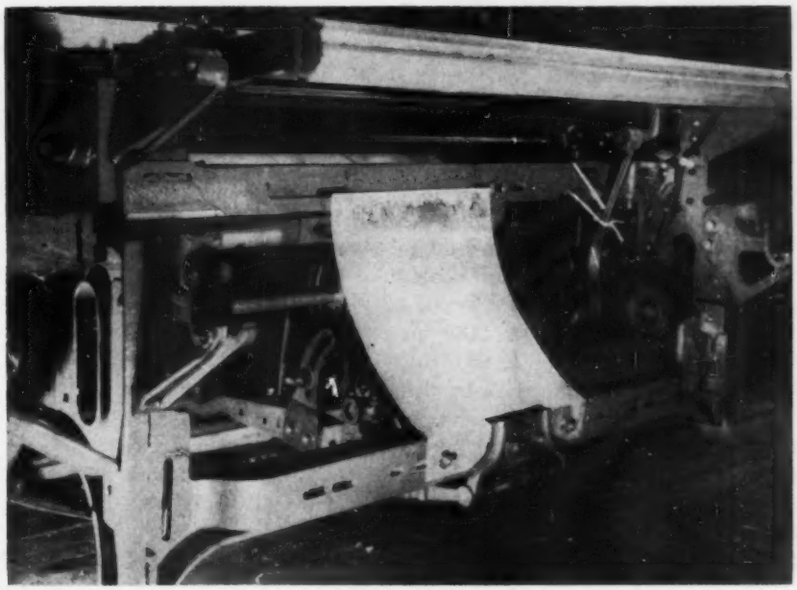
EDITOR TEXTILE INDUSTRIES:

Concerning the effect of choked trumpets on spinning frames, I wish to advise that we consider this to be a very minor problem indeed. We have run a good many tests on spinning here and find well under ½ of 1 per cent of the ends down are due to choked trumpets on spinning.

If the spinning room gets too damp, or if the mill is using oil, and an excessive amount of oil gets on some portion of the stock you might get some choking of trumpets at the spinning frame. However, in our experience this has never been any problem.

CONTRIBUTOR No. 7993

TREADLE GEAR SPLASH GUARD FOR LOOMS



Rayon print cloths woven at Star Rayon Mills, Fall River, Mass., are protected from costly oil stains by a company designed treadle gear and splash guard. Cut from galvanized sheet metal, guards are bolted to the back cross brace of every 50-inch loom in the shed. Each guard is curved to avoid contact with the loom beam and mounted so that it does not interfere with the operation of harness levers, gears, and cams. The guards can be easily removed for cleaning or for access to the harness motions. A local tinsmith manufactures the guard from the original plans of Joseph Ansforth, superintendent of the mill.

Defects in Silk Fabrics

EDITOR TEXTILE INDUSTRIES:

I should appreciate some information from your readers on how to prevent wavy places, uneven picks, and consequently short pieces of fabric in producing silk goods. Our weave room is producing an excessive amount of fabric with the aforementioned defects, and to this date we have not found the source of trouble.

CONTRIBUTOR No. 8169

EDITOR TEXTILE INDUSTRIES:

To answer the question asked by CONTRIBUTOR No. 8169, I wish to tell of an experience I had in Paterson, N. J.

Our mill was having all kinds of difficulty with wavy places in the cloth caused by irregular picks. An excessive number of short pieces of cloth were caused by harness cords breaking and the ends of warp therein floating on the underside of the cloth.

This particular mill hired a man to stay in the plant a few days to make observations and find a remedy.

It was found that the gears in the take-up motion were meshed too tight, causing them to be hard to turn. The weights and ropes, used for friction let-off, were not operating properly.

The observer recommended that when a warp runs out the entire train of gears in the take-up motion should be cleaned and set deep enough to turn satisfactorily. When the gears are set correctly it is possible to turn the entire take-up motion with one finger by pulling lightly on one of the gears in the train. The ropes on the friction let-offs should be turned and rubbed with graphite when the warp runs out, thereby giving them the right amount of holding power.

These two remedies completely eliminated irregular picks in the plant. The excessive number of short pieces of cloth caused by broken harness cords were greatly reduced by having the loom fixers patrol their sections several times each day to find weak cords and replace them before the breakage occurred. This eliminated the short pieces of cloth which were caused by having to cut the rolls of fabric where the warp floats occurred on the underside of the cloth.

CONTRIBUTOR No. 8170

Discussion on Thin Places in Yarn

Question Briefed: *We would appreciate advice from your readers on how to avoid thin places in the type of yarn we are manufacturing. We make knitting yarns and would like to make 20s to 50s, but we have not been able to make a yarn finer than 20s that will stand up in quality.*

We use Texas 15/16-inch Strict Middling cotton, five bales to the mix, processed as follows:

(1) *Feeder hopper.*

(2) *Bale breaker.*

(3) *Up-stroke cleaner (converted to downstroke).*

(4) *Vertical opener.*

(5) *One process picker (3 beater).*

(6) *Breaker card (40 inches wide, 24-inch doffer, 70-grain sliver, 12½ lbs. per hour).*

(7) *Lap machine (20 inches wide, 42 ends up, making lap in 6 minutes).*

(8) *Finisher card (55-grain sliver, 8½ lbs. per hour).*

(9) *Breaker and finisher drawing (55-grain sliver, front roll speed 250 rpm).*

(10) *Slubber (11 x 5½, 100 rpm front roll, 1.00 hk. roving).*

(11) *Intermediate (9 x 4½, 96 rpm front roll, 2.00 hk. roving).*

(12) *Speeder (8 x 3½, 79 rpm front roll, 4.00 hk. roving). Due to shortage of speeders, it is necessary that we run part of our roving on intermediate frames.*

(13) *Spinning frame (single creel, conventional draft, 20s yarn). About half of our spinning has self-weighted middle rolls. We tried 8.00 hk. roving doubled and the yarn was no better. It is necessary for us to use excessive twist on the spinning to get it to run. This together with the thin places in the yarn makes a very unsatisfactory product. All of our machines are in fair condition, and we do not think that our trouble is due to roll settings.* (CONTRIBUTOR No. 7906, *August*, 1947).

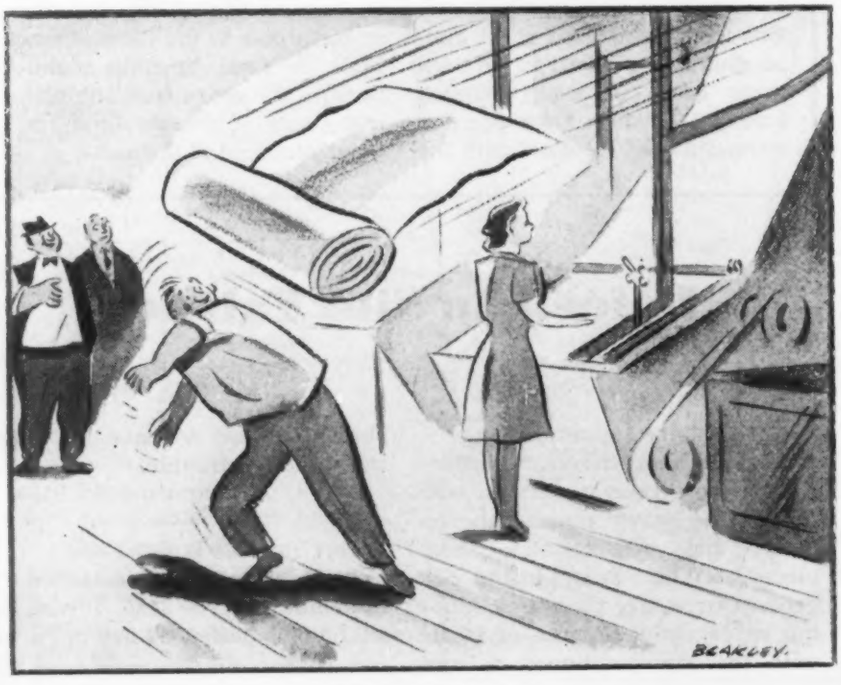
EDITOR TEXTILE INDUSTRIES:

I have read with interest the question by CONTRIBUTOR No. 7906.

If this problem were mine, I would use a longer staple than 15/16-inch for hosiery yarns of any count. A staple less than 1 1/16-inch is not practical nor profitable when quality and quantity are desired.

A mix of five bales is inadequate and should be increased to at least 20 bales. The mix should

"You'd almost think that inspection machine was human the way it rejects shoddy workmanship."



HOW OTHER MEN MANAGE

be fed in equal (small) parts from each bale and as many parts fed into the hopper at one time as it is possible.

The machine layout seems to be good; however my experience has shown that vertical openers can be eliminated, particularly in this case where it appears that the stock is being overworked.

The draft on breaker drawing is too long and should be shortened to at least 5.5.

The draft on slubbers is 6.6 which is entirely too high on a conventional type slubber. The work should be improved if the draft is shortened to not more than four. By shortening the draft on the slubbers the draft can be increased at the intermediate to improve the roving.

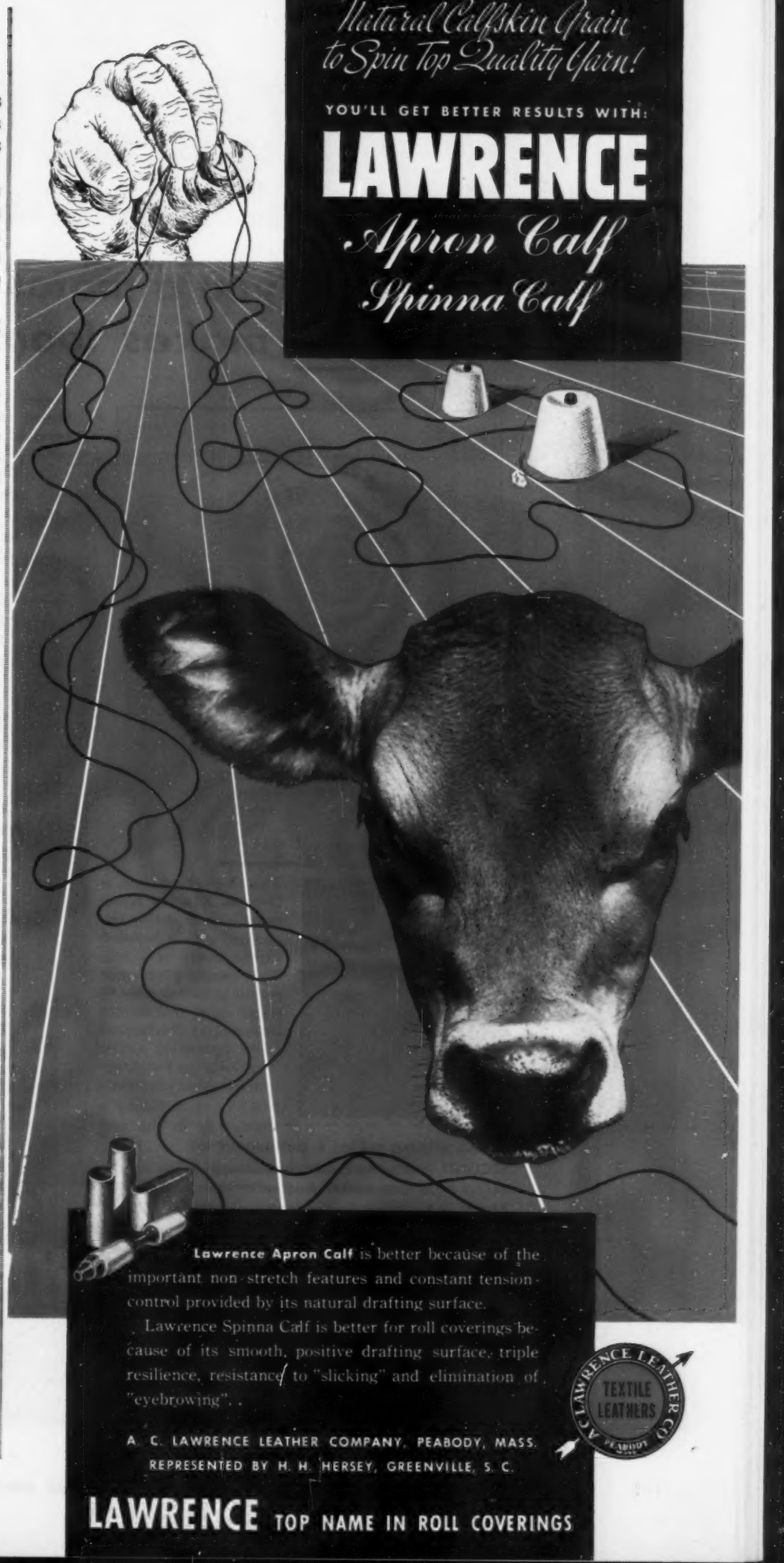
The draft of four on speeders is entirely too short and should be increased to about 5 to 5.5. Better drafts and better balanced drafts are definitely needed on the roving frames. Although rearranging the drafts may not eliminate all of the troubles, it certainly should eliminate some of them.

Single creel spinning is far from desirable, but satisfactory yarns can be made if the roving is good. CONTRIBUTOR No. 7906 should not use the same roll settings on self weighted spinning rolls as he does on conventional type weighted rolls. When he used 8.00 hk. roving doubled in the creel the draft (4) was too short.

I am convinced that CONTRIBUTOR No. 7906 is having trouble caused by short staple cotton, too much beating in opening and picking, and improper mixing and blending. The greatest trouble maker is the extremely bad arrangement of drafts on slubbers and roving frames. Apparently his spinning is satisfactory.

I am spinning 26s hosiery yarn from 1 1/32-inch cotton, 1.37 hk. roving (one process) doubled in the spinning frame creel with conventional spinning frames equipped with self weighted rolls. This is extreme drafting, but I do have good roving from the cards to work with.

CONTRIBUTOR No. 8166


It takes Natural Calfskin Grain to Spin Top Quality Yarn!
YOU'LL GET BETTER RESULTS WITH:
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Lawrence Apron Calf is better because of the important non-stretch features and constant tension control provided by its natural drafting surface.
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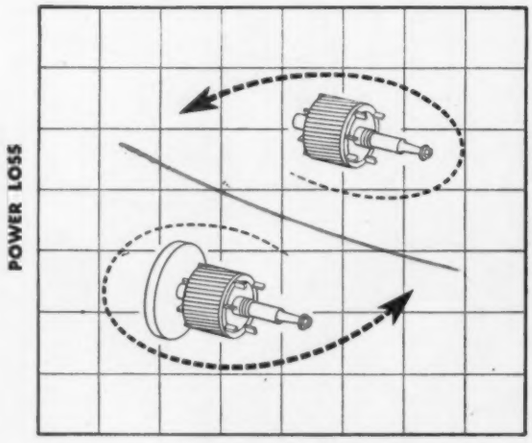
REPRESENTED BY H. H. HERSEY, GREENVILLE, S. C.
A. C. LAWRENCE LEATHER CO. TEXTILE LEATHERS PEABODY
LAWRENCE TOP NAME IN ROLL COVERINGS

we've added

...to give you a motor that does more work and makes loom "feel" better!



FLYWHEEL EFFECT
This chart shows how the addition of flywheel effect in a loom motor reduces power lost through motor heating.

Today, the General Electric totally enclosed loom motor is better than ever! For, where the loom needs it, you can specify a *standard* G-E loom motor with an integrally-mounted flywheel at very little extra cost! You get these important advantages:

LESS POWER USED — By increasing the flywheel effect in the motor, power losses caused by pulsating loom loads are reduced materially.

MORE SHAFT OUTPUT — Generally speaking, a flywheel motor can be one rating smaller (or allow increased loom speed) and still do a satisfactory job.

LOWER MOTOR SPEED — You can reduce the speed of your motors from 1800 rpm to 1200 rpm and thus take advantage of the inherent merits of the lower speed motor.

BETTER PERFORMANCE ON YOUR LOOMS! Loom fixers report that G-E flywheel motors actually *improve* loom performance. The loom "feel" is better and there is less variation in motor speed throughout the operating cycle.

NEW BEARINGS, TOO!

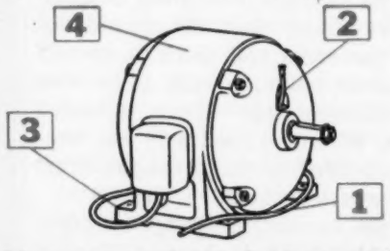
The bearings on a General Electric loom motor are bronze, backed with a bonded outer shell of steel. This means your loom motor is better able to stand up to the shocks imposed by the typical loom operating cycle. This bearing construction is better because—

FIRST, it retains a tighter fit in the end shield without taking a permanent set.

SECOND, it is better finished, making possible a more uniform oil film, and thus, greater load capacity.

THIRD, it has been designed to make the end shield, rather than the bearing sleeve, absorb punishing shaft thrust.

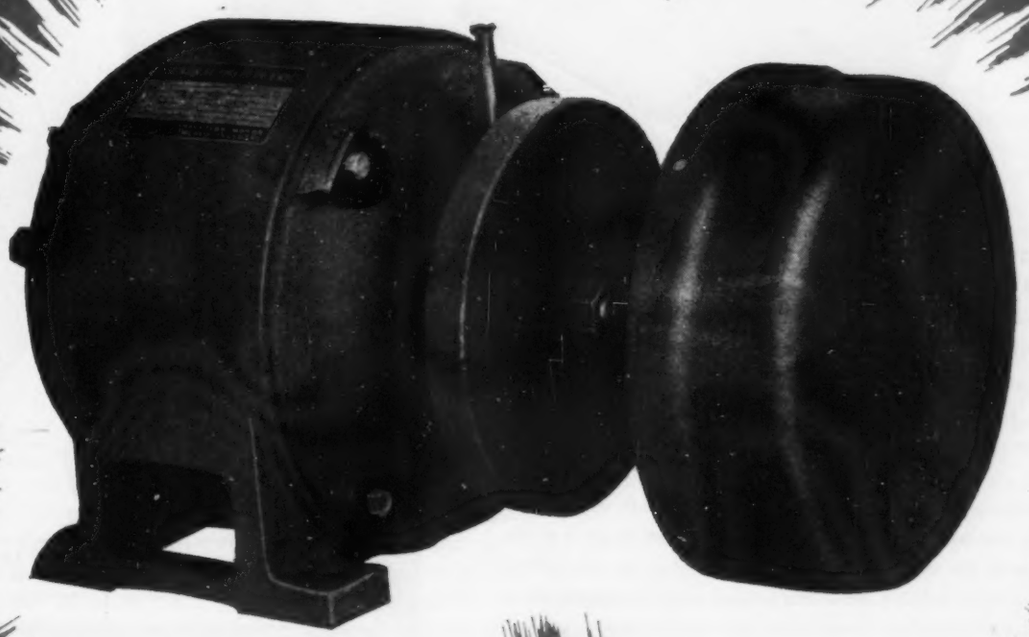
More Convenience Features!



1. G-E loom motors are furnished with a terminal box and Flamenol ® multiconductor cable containing ground wires in accordance with Associated Factory Mutual Fire Insurance Companies' recommendations. No conduit is required with this arrangement but the terminal box can accommodate conduit wiring when used.
2. Oil fittings are located on top where they are easily accessible for filling.
3. Footholes are drilled for heavy mounting bolts.
4. Handhole between feet makes mounting easy.

GENERAL ELECTRIC

a flywheel!



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LOOM MOTORS

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General Electric Co., Section B654-1
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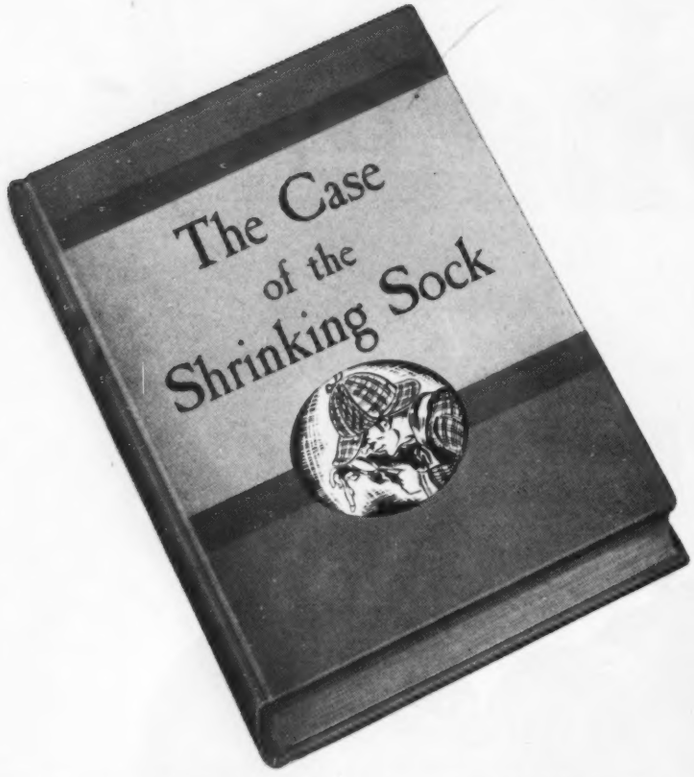
Please send me without obligation a copy of your Bulletin GEA-5011B which describes the G-E totally enclosed 40C rise loom motor — both standard and flywheel types.

Name _____

Company _____

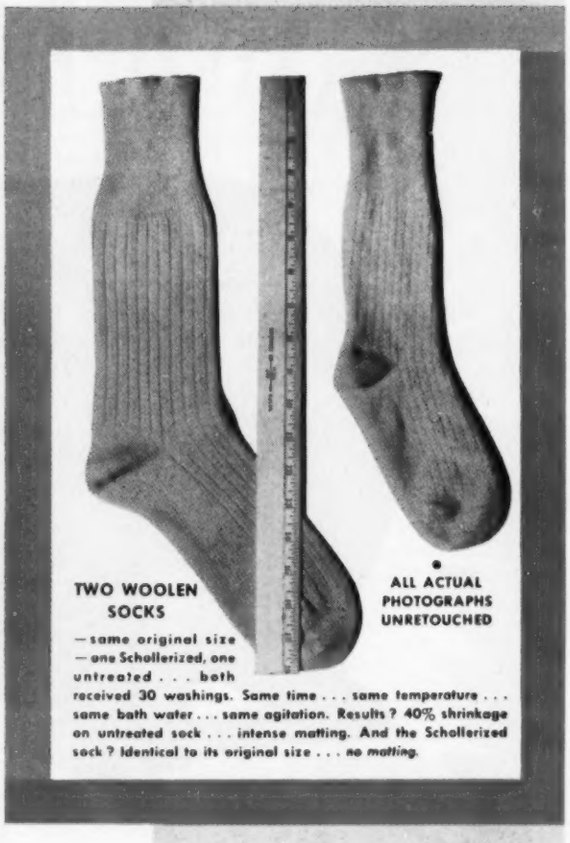
Address _____

City _____ State _____



"THE CASE OF THE SHRINKING SOCK" is a sad but dramatic story! Like any good wool product, it had wonderful natural characteristics until it came into contact with its mortal enemy, the Wash Tub! Here it struggled valiantly to retain its fine texture, its feel and hand . . . courageously to keep its natural resiliency, elasticity and appearance. But, alas, even the most careful laundering brought on Matting and Felting, and that infamous team rapidly ended its useful life!

BUT, the story is not without its moral: If the Sock (or, in fact, any wool product) had been SCHOLLERIZED, it would have laughed at the nefarious aims of the wash tub and its cohorts—Matting and Felting! No matter how many times it came into contact with its antagonists, it would have never matted and felted, never have shrunk from its original knitted or woven size. Its *useful* life would have lasted for the life of the fabric!


TWO WOOLEN SOCKS
—same original size
—one Schollerized, one untreated . . . both received 30 washings. Same time . . . same temperature . . . same bath water . . . same agitation. Results? 40% shrinkage on untreated sock . . . intense matting. And the Schollerized sock? Identical to its original size . . . no matting.
ALL ACTUAL PHOTOGRAPHS UNRETOUCHED

Made to size . . . it will stay to size . . . Because it's—

The **SCHOLLER WOOL SHRINKAGE CONTROL PROCESS*** removes the primary cause of wool shrinkage—matting and felting—without any effect upon the inherent resiliency, elasticity, recoverability and texture of the original wool. The treatment of the wool involves the addition of no foreign materials, therefore no change in weight and feel or "hand". Appearance is unchanged while the true comfort and useful life of the processed wool fabric is greatly enhanced. The strength of the Schollerized yarn is generally the same or greater than the original. Extremely flexible in application, wool may be Schollerized in the raw stock, tops, skeins, packages or fabric.

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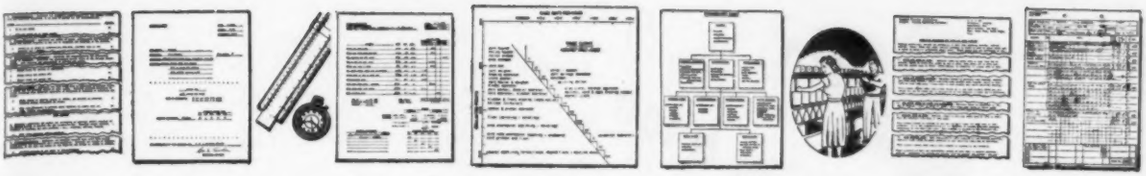

Industrial Engineering for the Small Plant

(*Continued from page* 110)

wage payment plan, properly administered and maintained, will reduce these variations in costs to practically zero. Of course, this incentive plan must be based on sound and fundamental principles, as previously stated. Accurate pricing may be had by thorough and competent engineering and cost accounting. In some industries the manufacturers set the prices, and possibly cotton textiles would be making a progressive step to do likewise.

X. What to Make

How OFTEN is management faced with the problem, which of two or more orders to take? No manager will take a job outside the range of sizes, patterns, or counts of his mill simply because it would not be profitable. Within the range of a particular mill, certain items are more profitable than others at a specific time. This, however, varies from time to time due primarily to the variations in selling price differentials from one item to another.

The problem can be quickly solved if each of the items in question can be accurately priced. The cotton yarn manufacturers find prices today of this order: 12s/2 cones @ \$0.56 per pound, and 16s/2 cones @ \$0.60 per pound.

Assumed that the mill can produce 100,000 pounds of 12s/2 per week or 70,000 pounds of 16s/2. The gross income for a week's run of 12s/2 would be \$56,000, and of 16s/2 \$42,000.

Now which of these two items gives the greatest profit to the mill? A pound of raw material costs the same in both cases; labor cost, if properly controlled, will be only slightly higher for 16s/2; overhead and burden remain approximately constant in both cases, resulting in a higher unit cost for 16s/2. If we assume a \$2,000 profit for each run; \$2,000 ÷ 100,000 = \$0.02 profit per pound on 12s/2; and \$2,000 ÷ 70,000 = \$0.0286 on 16s/2 must be realized for the items to be equally profitable.

With the \$0.04 differential in selling price of the items, the light count seems to have the advantage; if the labor costs are properly controlled and the overhead and burden costs are accurately known and not too high. These are problems for the Industrial Engineer, with the help of the cost accountant, to solve for management. Knowing which item to make and what order to take is the difference between operating on a profitable basis and just hoping that operation will be profitable.

Attaining the Industrial Engineering Program. There are several ways to attain a satisfactory industrial engineering program.

1. Qualified Engineers. These are professional men who are competent in their particular field. Industrial Engineers should be no exception. As in any other profession there are all breeds, types, and gradations of industrial engineers selling their services. To an alarming extent it has become a racket.

There are many men in the profession who are engineers in the real sense of the word and are perfectly competent as a result of training and experience to accept the responsibilities of an Industrial Engineer in a plant, large or small, and do a thoroughly satisfactory job, or to display enough nerve to inform the management if they can be of no worthwhile benefit. These thoughts are mentioned only to warn all who are interested in employing Industrial Engineers to be very sure that in every case only a qualified industrial engineer is employed.

The small manufacturers are inclined to think that the long-haired engineer is too expensive for them and would be out of place in a small plant. Such is not the case. The smaller the plant the better the engineer must be, and the operation is very small that cannot afford the best. Any manufacturer can afford to pay up to 5% of the direct payroll for good Industrial Engineering service on a sustained year to year basis.

Plants that are large enough to afford a full-time industrial engineer should employ one, by all means. Experience has very conclusively shown that there is nothing permanent in industry but change, and that an Industrial Engineering program cannot be initiated, installed, and then forgot. It must be kept up to date and properly administered.

2. Consultants. There are a number of reliable consultants and consultant firms in the Industrial Engineering field. There are also some that are not so good. The consultant may be employed to come in and make the necessary surveys of the plant and recommendations based on his findings. He may be employed to do certain phases of the program or to set up and install an entire program. Usually local personnel is used to some extent in the work, with the idea of training them for administering and maintaining the program after it is installed. The consultant does his work fast, and the trainees must be of the caliber to learn rapidly.

The use of consultants is usually advisable where a full-time Industrial Engineer cannot be afforded and in cases where special problems arise requiring broad professional experience. There is a very definite place in the Industrial Engineering field for the consultant and the use of his services. Regardless of the size of the plant and the proficiency of the plant Industrial Engineering organization unusual problems come up in operations, and these men with their broad experience in all types of industry can usually solve

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Yes, you'll find the new flake-type CERFAK headed for "far-away places," snugly packed in 175-lb. cartons and destined for a wide variety of wet processing jobs.

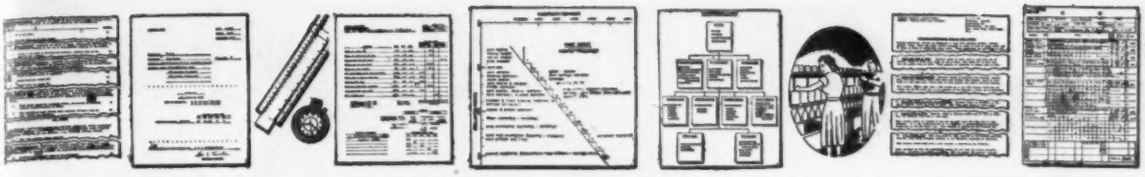
Cerfak's older brothers are of the fluid type — excellent detergents and wetting agents. All started out in life from Houghton's organic chemical plant, and have long since paid their way by doing an excellent job.

This dry Cerfak has high detergency properties and is a fast wetting agent, too. It works well in either hard or soft water, and is usable over the full pH range. It is free-rinsing, has good dispersing properties, works fine with alkaline builders of all types.

So with a choice of four detergents, each having specific advantages for certain applications, Houghton definitely holds the edge in the field of surface active agents. What's *your* need for scouring or wetting out? May we recommend, and quote? E. F. HOUGHTON & CO., Philadelphia 33, and all principal cities.

CERFAK

SYNTHETIC DETERGENTS AND WETTING AGENTS



the problems in short order. As in any other profession, no man can know all of the answers, and at times he needs consultation.

6. Sustained Engineering Direction and Responsibility. Probably the most suitable arrangement for the average small plant to make is the employing of an Industrial Engineering firm to plan, install, and assume the responsibility of maintaining the program on a sustained basis. In this way competent service may be obtained within the yearly budget of even the smallest plant, and the program may be extended over a relatively long period of time.

In other words, the cost of installation is spread over several years, together with maintenance and administrative costs instead of the usual large initial cost. This plan, of course, is no dodge for the cost of the program and in no way lessens its effectiveness, but tends to enhance its value, particularly in the small organizations.

Management, in the past, has had some serious complaints with regard to consultants and engineering firms, some of these are: too expensive, turn the plant upside down, disrupting the entire organization, and leaving the plant with data and plans which they do not understand how to use and maintain. These complaints are well taken by the engineers of the field but they can only recommend better arrangements.

The cost of Industrial Engineering is not too much, no matter what it costs, if the company makes a reasonable profit as a result of the work. In most cases, a plant can expect at least as much net profit as is paid for the service. As a matter of fact, a reputable engineer or firm will not take a job where satisfactory profits for the company cannot be realized.

If the installation of the program is spread over a considerable length of time, the disruption of daily routine is reduced. It is desirable to have as little upsetting of routine as possible from the engineer's and the management's point of view. This is especially true in a small plant where any amount of disruption materially reduces production with telling effect on the work of the operators. Of course, if the plant is one big mess, the thing to do is straighten it out as fast as possible, because in a case of this nature there is nothing to be lost by disruption.

Where there is no full time Industrial Engineer, some one of the plant personnel must be familiar with the work that is done and be able to administer it to some extent, which includes answering questions, making decisions regarding special cases not specifically covered, gathering supplementing data, and possible expansion of coverage. In order for a man, who is more or less inexperienced in the work, to get the experience needed, time is required. The longer he spends on each part of the program; the better qualified he is to understand what has been set up and applied.

4. Development of Local Personnel. It is quite apparent that a small plant must have a sound Industrial Engineering program. The plan alone and the engineering service will not do the entire job. Every one in the organization is affected and becomes a vital element in its success. The operative must be trained in new and better methods and must be able to perform at a high degree of standardization; the supervision must be able to assist in maintaining the program and in applying the program in their departments; and management must insure that all functions in connection with the program are successfully performed.

The constant development of personnel in the organization along industrial engineering lines is the only answer to a successful program that will endure. There are many monuments in industry today, to failures due to improperly developed personnel.

The best training ground for supervisors and managers is in the Industrial Engineering department. The work covers the whole plant and the details of each operation, location of waste and means for decreasing it, contact with all employee levels, and a multitude of things that go to establishing a solid background for supervisory and management responsibilities. As many men as possible should spend time actually working with the engineers.

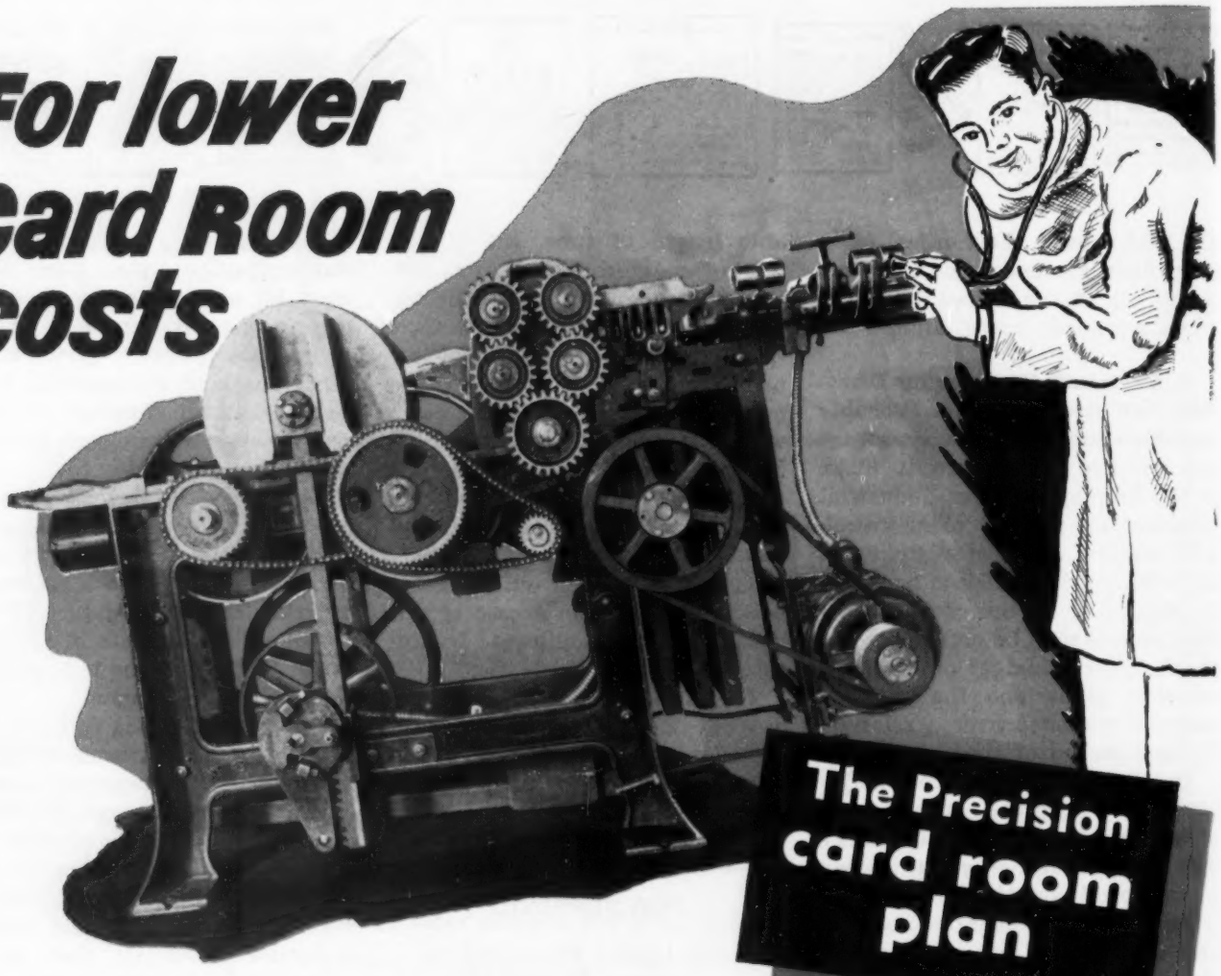
In every plant, where it can be afforded, there should be a full time understudy to the Industrial Engineer. This should be the case where there is a full time Industrial Engineer or where he comes for short periods from time to time. The man assigned as the understudy should never be selected simply because he went to high school or college and is available, but should be a man of the caliber who has the potential to run the plant.

The top man in the organization must develop just as those in the plant. Almost all failures are due to the errors of top management. As previously stated, industrial engineering is a tool of management and not a substitute for management. The machinist who does not know how to use an engine lathe should not be put on a machinist's job nor be called a machinist.

FOR REPRINTS

of this article, please address your request to the Editor, "Textile Industries," 806 Peachtree St., N. E., Atlanta 5, Georgia

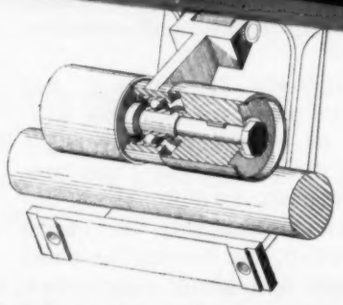
For lower Card Room costs



The Precision card room plan

PRECISION Modernizing
— Complete or Step-by-Step!

The PRECISIONeered Plan for cutting costs and improving yarn quality in Cotton Card Rooms can be installed with minimum of work stoppage. Precision Modernization of the Cards, Sliver and Ribbon Lap machines, Comber, and Drawing Frames results in new smoothness and economy of operation—reduction of waste—firmer and larger laps and a finer quality yarn. But let a Precision Engineer demonstrate this plan—in whole or in part. Write us for suggestions on your particular Card Room needs!



PRECISION-Proved TABLE TOP ROLLS
— a worthy beginning!

Precision's Ball Bearing Top Rolls on the Sliver Lap machine (a part of our Card Room Plan) are like a jewelled movement, compared to the old "dollar" watch. Simply, it's an inexpensive step toward quality yarn production, with no drag—no stretching —just smooth, ball bearing operation. Write us without obligation.

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NEW EQUIPMENT
AND MATERIALS

New Finishing Machinery by Butterworth

A newly designed line of padders, known as "Bullet" padders, has been announced. These new 2-roll and 3-roll padders are reported to be more flexible, more interchangeable, and more basic.

The machines have a streamlined, bullet-shaped frame. They are trim in appearance, compact in design and are functional in operation. For example, it is now possible to convert a 4-ton Bullet padder into a 15-ton padder without tearing out an entire frame or without loss of operational time. Rolls in any diameter from 12 to 20 inches can be used. The machines are also equipped to operate at any desired pressure from zero to 15 tons.

Interchangeability of rolls, depending on the type of operation desired is one of the outstanding features of these new padders. In making a conversion, only rolls have to be changed; basic parts of the padders remain the same.

A new horizontal rope saturator and a new rope squeezer for continuous bleaching have also been developed by this manufacturer of dyeing, bleaching and finishing equipment. Higher speeds, better bleaching and better handling of goods are now possible with these new machines, it is claimed.

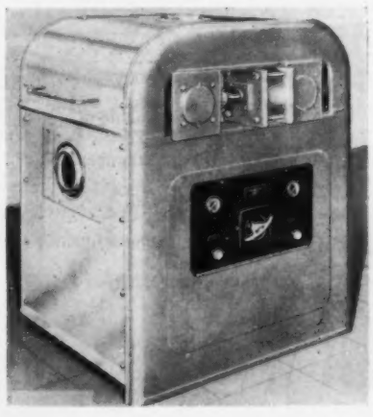
The principal parts are interchangeable, making the machines more flexible. Framework, bearings, rolls, air cylinders and control mechanism of the rope squeezer are interchangeable with the saturator.

Streamlined design, closures made of stainless steel, rollers completely enclosed, compact and easy to reach controls, and three-position poteye panels are several additional features claimed for these new machines.

H. W. Butterworth & Sons Co., 2417 East York St., Philadelphia 25, Pa.

For additional data, request item E-105. using business reply card on page 230.

View of control side of Butterworth rope type squeezer.



Pneumatic Roll Picker

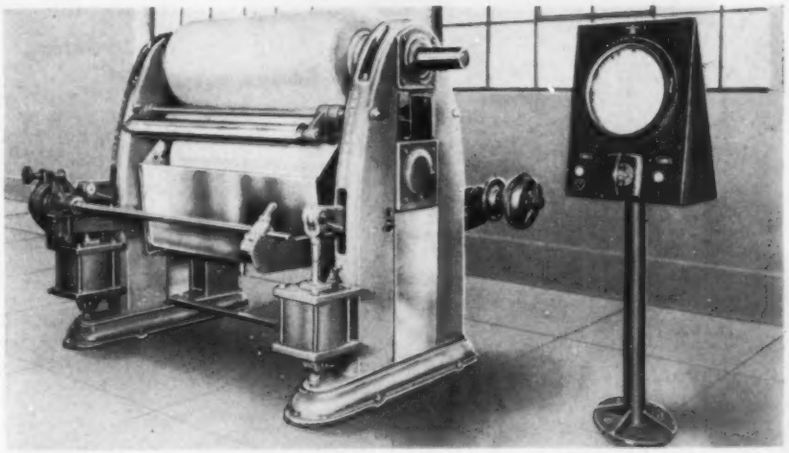
Featuring easily replaced picks in three sizes, a recently developed pneumatic roll picker has a speed of 10,000 rpm. Light in weight (1 lb) and requiring minimum maintenance, this roll picker is cool-running and gives trouble-free performance due to oversize ball bearings.

Pneumatic roll picker (Skilsaw).

Powered by 90 pounds per square inch air pressure, the roll picker offers a modern, time-saving lint removal method.

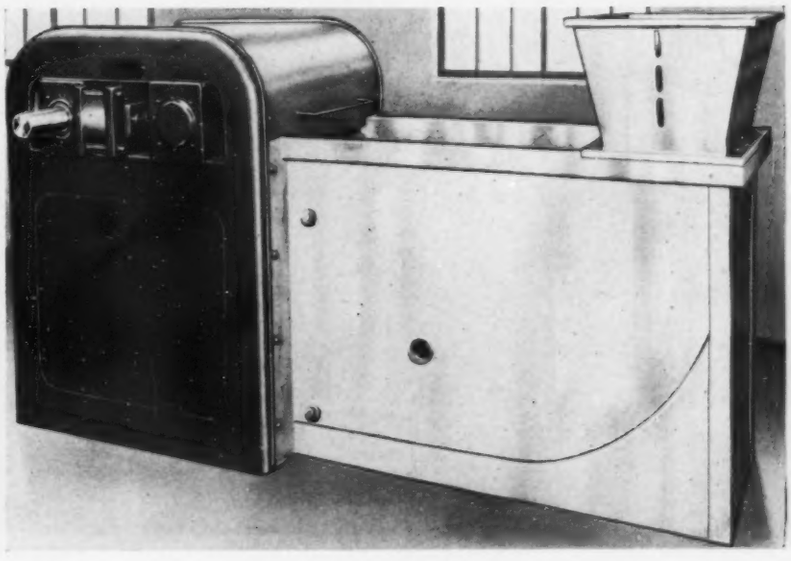
Skilsaw Inc., 5033 Elston Avenue, Chicago 30, Ill.

For additional data, request item E-106, using business reply card on page 230.



Above, front view of the Butterworth two-roll "Bullet" padder.

Below, new horizontal rope saturator by Butterworth.



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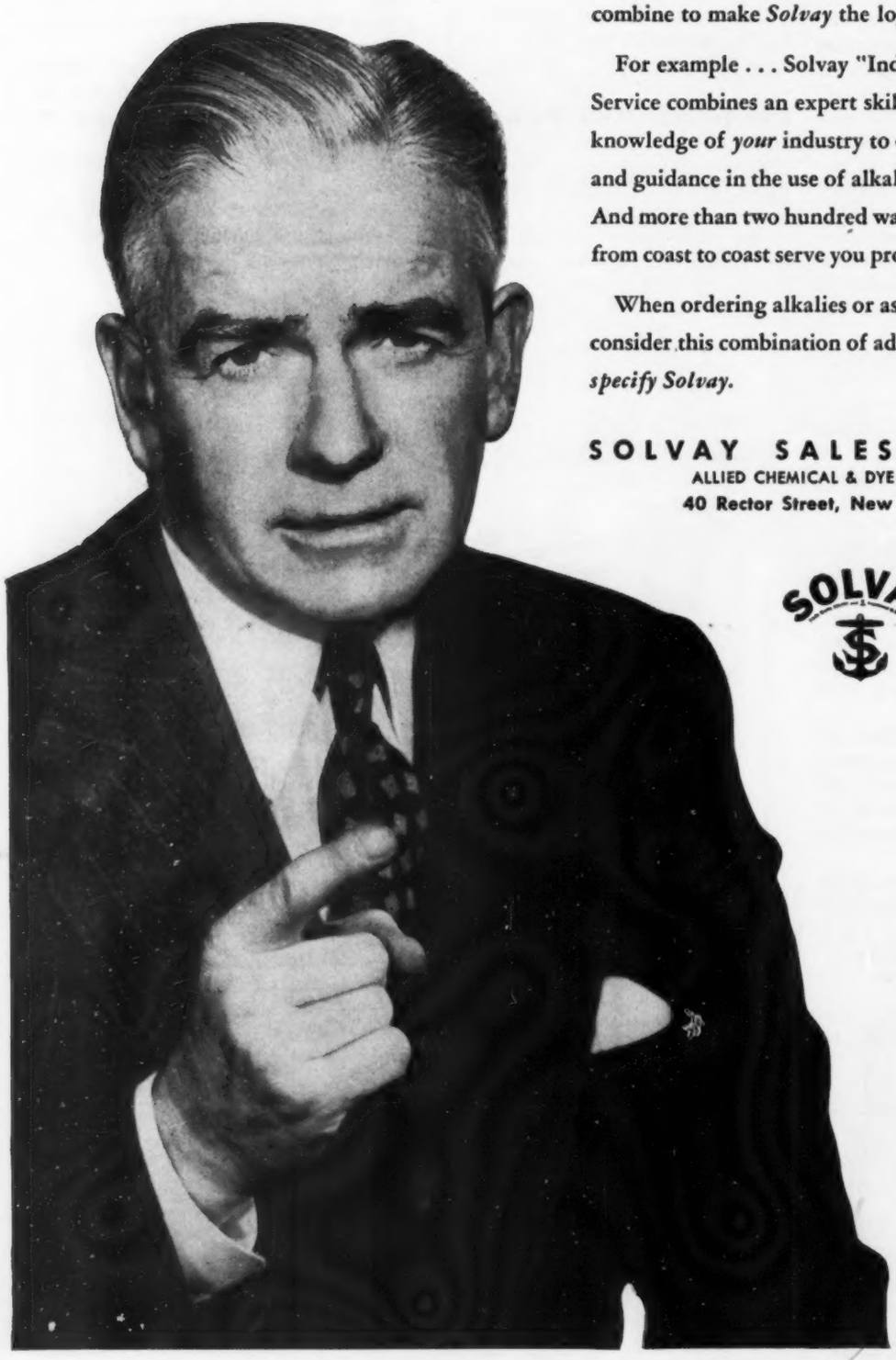
For example . . . Solvay "Industry-Wise" Technical Service combines an expert skill in alkalies with an intimate knowledge of *your* industry to offer invaluable counsel and guidance in the use of alkalies and associated chemicals. And more than two hundred warehouses and stock points from coast to coast serve you promptly and economically.

When ordering alkalies or associated chemicals, consider this combination of advantages and you, too, will *specify Solvay.*



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- Sodium Nitrite
- Para-dichlorobenzene
- Ortho-dichlorobenzene
- Monochlorobenzene
- Methanol
- Ammonium Chloride
- Formaldehyde

High-Speed Direct Warper Developed by Sipp-Eastwood

A new warper featuring heavy construction and minimum vibration at high operating speeds builds beams up to 36 inches in diameter and 54¼ inches wide. Minimum yarn speed is reported to be 150 or 225 yards per minute with a 4 to 1 upward to a a maximum speed of 900 yards per minute.

An a-c — d-c drive is provided. The all-electronic circuit makes operation of the machine easy. Constant, uniform linear warp speed is automatically maintained throughout the entire beam build up. A small potentiometer mounted on the push-button station permits ready adjustment of the operating speed over the range outlined above. An electrical tachometer is provided to indicate the operating speed at all times.

Operation of the machine is entirely by pushbotton control. Depressing the "start" button energizes the beam motor, and it will accelerate smoothly to the present operating speed. Depressing the "stop" button will quickly bring the drive to rest by means of dynamic braking.

A motor mounted magnetic brake as well as a magnetic operated beam brake provides auxiliary braking to the beam, measuring roll and pressure roll, and also is provided to hold the beam at standstill.

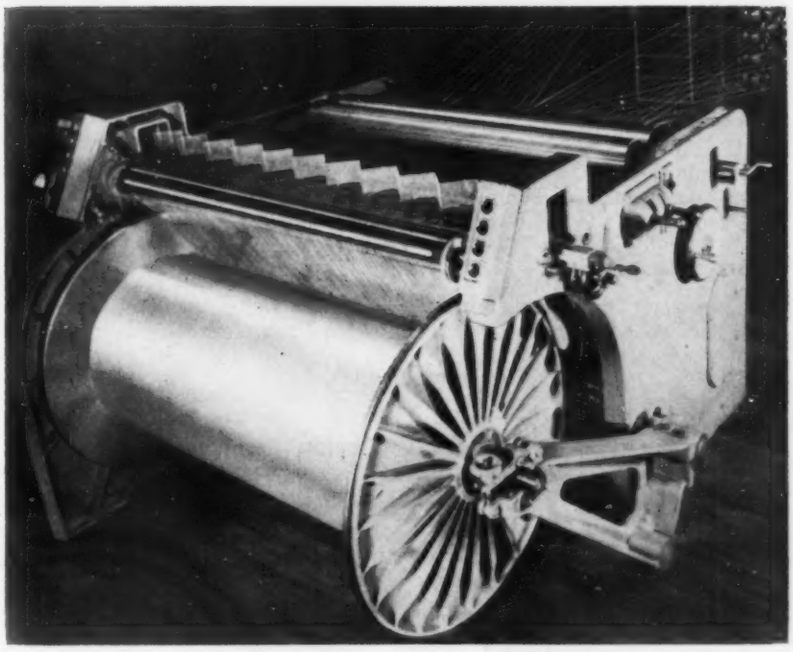
A low threading and inspection speed is provided by the use of a momentary contact type "jog" push-button which must be held close to maintain operation of threading speed. This control circuit also responds to the demands of thread break relay of the creel and to a predetermined yardage counter mounted adjacent to the control push-button station. The drive from motor to beam is through pulleys and multiple V belts.

Beam is spindle driven by means of three drive pins in the head. Handling of the beam in and out of the warper is done entirely by a separate hydraulic system, independent of the main drive. The operator, by the manipulation of the control levers, can easily and safely remove and insert beams.

The pressure roll and dresser rolls are of large diameter, balanced and of light but strong alloys for smooth operation.

Sipp-Eastwood Corp., Paterson, N. J.

For additional data, request item E-101, using business reply card on page 230.



New high-speed direct warper by Sipp-Eastwood.

Improved Loom Spreader

A new loom spreader features several improvements over former models. Four machined-in-line bearings on one rigid casting constitutes an advantage in the new patented spreader. No adjustment is required at the time of installation, and no adjustment is necessary when the bearing bushings are replaced.

Heavier weight provides greater rigidity and sturdiness in the spreader-and-loom union and does not interfere with beams, heddle frames, or spring-type crank arms, according to the manufacturer.

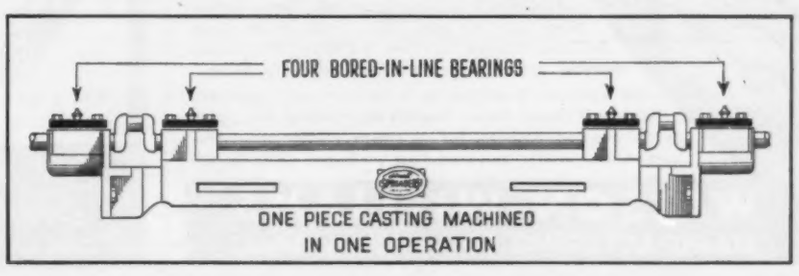
The four bored-in-line bearings have reduced the probability of improper alignment upon installation and later replacement of bushings. The difficulty encountered in maintaining tight and properly aligned loomside bearings has been overcome by eliminating these bearings.

According to an announcement, rigid union of spreader and loomsides holds gears in upper mesh at all times, and increased speeds, less vibration, and better quality in production are claimed.

Hunt Machine Works, Inc., Greenville, S. C.

For additional data, request item E-104, using business reply card on page 230.

Line drawing of improved loom spreader (Hunt).



High-Speed Tenter Frame

A new high-speed tenter frame has been announced which features completely enclosed delivery end, heavy one-piece bed plate, steel floor stands and crossheads, totally enclosed drive units, wide parallel rails, large drive sprockets, and anti-friction bearings.

According to an announcement, speeds, up to 250 yards per minute are practical with this frame when it is equipped with a No. 11 patented tenter chain. Each clip of this chain is connected to the next one by a standard roller chain link. The drive sprockets and idlers do not touch the

body of the clips, thereby assuring quiet operation at high speeds.

Marshall and Williams Corporation, 46 Baker Street, Providence 5, R. I.

For additional data, request item E-102, using business reply card on page 230.

Industrial Paint

A specially prepared industrial paint has been designated Millwite. It is a heavy, white semi-paste that can be applied by brush or spray. The product is a titanium dioxide paint and is said to possess good hiding and coverage qualities.

Various tints may be added as desired.

Stonhard Company, 1306 Spring Garden St., Philadelphia 23, Pa.

For additional data, request item E-109, using business reply card on page 230.

Hevi-Lift hoist (Harnischfeger).

New Hoist Designed For Dyehouse Application

The Hevi-Lift hoist is said to be well-suited for dyehouse service because of its low headroom design and ability to withstand unusually high temperatures and humid conditions.

An important feature claimed for the hoist is its full magnetic push-button control which permits instant lifting, traveling and lowering operations.

Available in capacities up to 15 tons, the hoist is adaptable for any monorail system and plant installation.

Harnischfeger Corporation, 4400 W. National Avenue, Milwaukee 14, Wisconsin.

For additional data, rquest item E-107, using business reply card on page 230.

Current Limiting Device

The Amp-trap is a current-limiting device which is designed to protect metal clad switch gear, busducts, circuit breakers, fuses and current transformers from damage by short circuit currents. It is sup-

it takes GOOD BEAMS to make good warps!

PROBLEM: ORDINARY BEAMS WON'T HANDLE THE PRESSURES OF NYLON AND RUBBER YARNS!

solution . . .

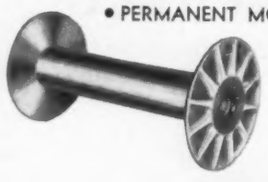
MILTON NYLON & RUBBER TRICOT BEAM

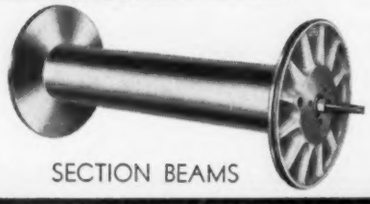
• FORGED HEADS
• RIGID BARRELS

Tested and proven under actual operating conditions, here is Milton's forged head beam designed especially to withstand extreme pressures encountered when warping tremendous yardages of monofilament; fine denier, low turn nylon; and rubber yarns! Heat-treated, aluminum alloy heads and barrels permanently joined with continuous heliarc welds. Write for complete information!

MILTON LIGHT METAL BEAMS are the result of years of close collaboration with mill production men . . .

• PERMANENT MOLD HEAD TRICOT BEAMS





SECTION BEAMS

MILTON MACHINE WORKS, Inc.
DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

Greater Production with our S7 and S7X Eye

A Northern mill owner writes: "Since equipping our S5 and S6 Looms with your S-7 eye Rayon Shuttles we have increased weaving room production from 68% to 90%."

His testimony is echoed by a Southern mill operator. "Watson-Williams Rayon Shuttles have solved this major rayon weaving problem for us (crepe filling). Our production has greatly increased since we began using them."

WATSON-WILLIAMS
MANUFACTURING CO.—Millbury, Mass.

Write for analysis of your problem. No obligation.

McPHERSON ADVANCED ENGINEERING SOLVES THIS PROBLEM

THE McPHERSON COMPANY
Engineers Architects
GREENVILLE S. CAROLINA

Announcement!

ACETATE BLACK DYERS . . .

amazing new developments have been taking place
in the improvement of our **AMACEL* BLACKS.**

Absolutely tops! the NEW, IMPROVED

Amacel BLACKS

. . . BLACK G.S.
. . . BLACK IV EXTRA

As developed with Developer BON or BONASOL* these new, improved *Amacels* give the finest **developed blacks** obtainable. Perfected through the latest scientific advancements, they offer to a greater degree than ever, better fastness—simplified application—consistent shade purity. Both are suitable for box or jig . . . both are highly dispersed—**practically water soluble**—holding stain on adjacent white viscose to a minimum.

American Aniline was the first successful U. S. producer of dyes designed especially for acetate fibres, and high quality has kept *Amacels* at the top in this field.

For detailed information on *Amacel Black G.S.* and *Amacel Black IV Extra*, as well as special data regarding your own particular requirements, consult our nearest branch. A.A.P. technicians are always happy to be of service.

AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York, N. Y. • **Plant: Lock Haven, Pa.** • **Branches:** Boston, Mass. Providence, R. I. • Philadelphia, Pa. • Charlotte, N. C. • Chicago, Ill. • Los Angeles, Cal. Chattanooga, Tenn. • **Dominion Anilines & Chemicals Ltd.** • Toronto, Canada • Montreal, Canada

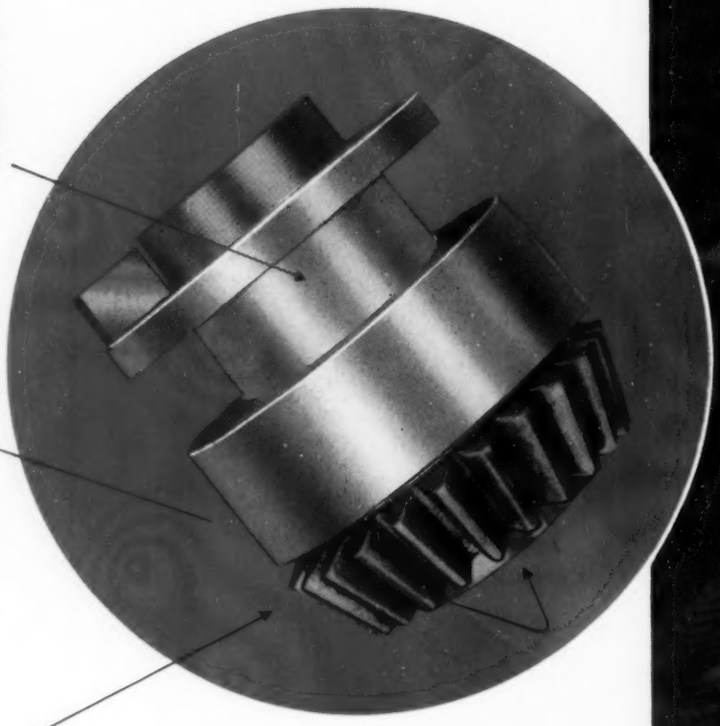
*Reg. U. S. Pat. Off.

Now! Ball Bearing Bobbin Gears!

Light weight aluminum upper portion of unit has pressed-in, turned bronze bushing. Houses bearings; threads receive gear.

Specially made Sealed-in Ball Bearing designed to take many times normal thrust. Bearing is permanently self-lubricated.

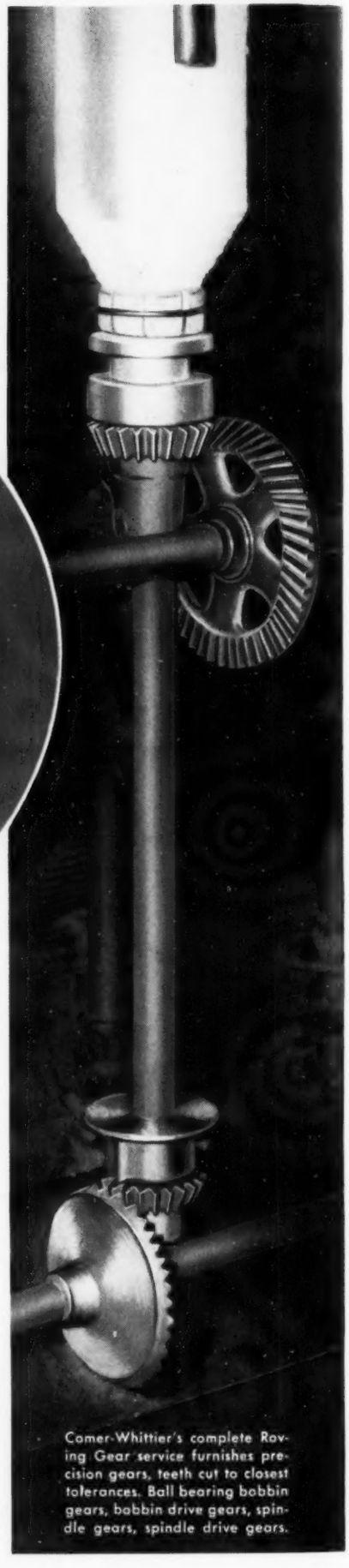
Extra-hard, alloy steel gear with precision cut tooth. Individually threaded, gear screws into upper aluminum section.



It's here . . . it's proved in actual operation! *Down go costs on roving maintenance and bobbin gear replacement!* Up goes efficiency. Less noise, less vibration. Higher speeds, more production. That's what you get with C-W's new Ball Bearing Bobbin Gear—adaptable to any type roving frame.

Sealed-in lubrication eliminates the constant oiling required by the old style gear. The C-W Ball Bearing Gear, with cut teeth, is of extra hard steel, quieter running and longer wearing. Individually threaded, the gear detaches from the main assembly; is replaced and back in operation in a matter of seconds *and* at a FRACTION OF THE COST of replacing the old conventional bobbin gear unit.

By far the most forward-looking development brought to the roving operation in 25 years. Get the details. Call, write or wire today.



Comer-Whittier's complete Roving Gear service furnishes precision gears, teeth cut to closest tolerances. Ball bearing bobbin gears, babbin drive gears, spindle gears, spindle drive gears.

COMER·WHITTIER SHOPS

Executive and Sales offices, 308 Ivy St., N.W.
Atlanta, Georgia, Telephone Cypress 2505
Shops located at Tucker, Georgia

plied in all sizes from ¼ ampere to 4,000 amperes, for a-c circuits up to 600 volts of any frequency, and for d-c circuits up to 750 volts.

The small overall dimensions of Amp-traps make them especially adaptable for use in enclosed motor starters, panel and distribution boards, and bus-duct systems.

The Chase-Shawmut Company, Newburyport, Mass.

For additional data, request item E-111, using business reply card on page 230.

Clamp Truck Speeds Handling of Cotton Bales

Designed to provide fast, convenient handling of cotton bales and other bulky items, a new clamp truck utilizes hydraulically operated clamp arms to grip the load for lifting and transporting. The clamp is of all-welded steel construction with dual double-acting hydraulic cylinders. It is mounted on the truck lift carriage with the control valve mounted in the operator's compartment.

Baker Industrial Truck Division, The Baker-Raulang Co., 2168 W. 25th St., Cleveland, Ohio.

For additional data, request item E-112, using business reply card on page 230.

New Line of Boilers Has Standardized Dimensions

Six new standardized water tube boilers are especially designed for coal firing with standard stokers, but can also be adapted to oil or gas firing without any major change in the installation. The sizes range from 7,500 to 17,000 pounds per hour guaranteed steam generating capacity with performance characteristics which permit near straight-line operating efficiency over a wide load range.

All parts are externally supported for simple erection and easy accessibility. Through the use of a distinctive water wall type construction on the rear wall and arch over the combustion chamber, a considerable portion of the total steam generating surface has been disposed to absorb radiant heat with consequent benefit to operating efficiency and reduction of furnace maintenance requirements, according to the manufacturer.

An important feature claimed for the line is the standardization of dimensions for various size units. The boilers are made with two standard tube lengths, 10 ft and 12 ft, expanded into sinuous electric steel sectional headers. Furnace width varies from 4 ft 7½ in. to 9 ft, depending on whether five, six, seven, eight, nine, or ten header sections are used.

Springfield Boiler Co., E. Capitol Avenue, Springfield, Ill.

For additional data, request item E-115, using business reply card on page 230.

Liquid Synthetic Detergent

Sulframin E Liquid is a modified alkyl aryl liquid, reported to have exceptional hard-water and lime-soap stability as well as excellent foaming, wetting, and detergent qualities. It is stable and effective in the presence of acids and alkalis, according to the manufacturer.

Sulframin E, prepared as a clear

JOANNA COTTON MILLS CO.

MANUFACTURERS OF QUALITY WINDOW SHADE CLOTHS and JOANNA FABRICS

☆

GOLDVILLE SOUTH CAROLINA

Selling Agents

H. S. PARKER CO.

66-72 Leonard St. New York, N. Y.

PARKS
Traveling Cleaners
have such fixed habits

Every so often they give spinning frames (spoolers, warpers, winders, too) a mild fanning. Lint is shooed away before it has a chance to bunch.

Improves Quality	Improves Quantity
Cleaner Yarn	Fewer Ends Down
Smoother Yarn	Fewer Stops
Fewer Piecings	Fewer Pickouts
Fewer Seconds	Fewer Cutouts

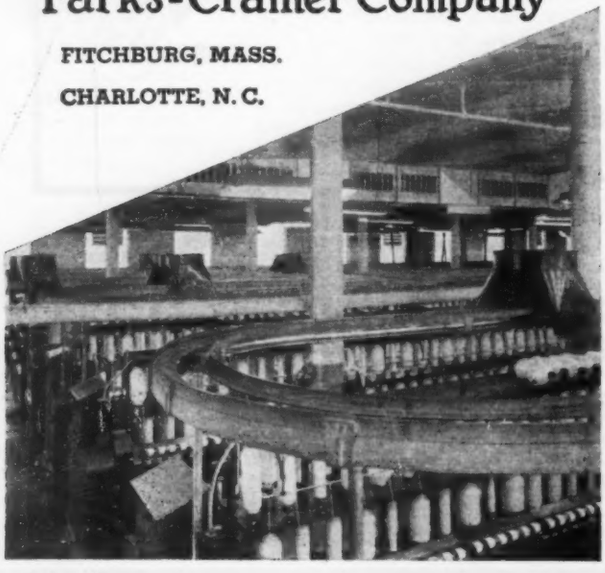
Lessens waste; waste of material, waste of time. Better working conditions. More is accomplished with less effort.

Not a bad investment.

Parks-Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.



Q. WANT PERFECT PRESSURE LUBRICATION?

A. CHANGE TO NON-FLUID OIL

• **NON-FLUID OIL does not separate or leave harmful, non-lubricating residues to clog fittings and bearings like ordinary greases.**

NON-FLUID OIL stays "alive" longer . . . protects bearings by constant lubrication until entirely used up. Send for instructive bulletin and free testing sample of NON-FLUID OIL.

NEW YORK & NEW JERSEY LUBRICANT CO.

292 Madison Avenue New York 17, N. Y.

Southern District Manager
FALLS L. THOMASON, Charlotte, N. C.

Warehouses:
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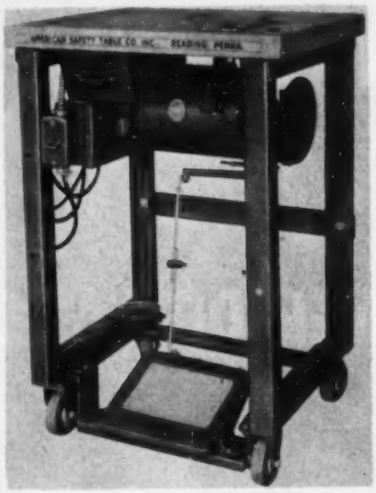
Works: Newark, N. J.

NON-FLUID OIL is not the name of a general class of lubricants but is a specific product of our manufacture. So-called fluid grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

NON-FLUID OIL
TRADE MARK REGISTERED



PORTABLE DRIVE FOR BUTT SEAMING

A new portable standard individual motor and portable stand for butt seaming was recently announced.

The stand is equipped with a single phase motor and can be plugged in anywhere. It is mounted on casters making easy maneuverability possible. Another feature is the pilot light which goes on automatically when the motor is running.

American Safety Table Co., Inc., Reading, Pa.

For additional data, request item E-134, using business reply card on page 230.

amber-colored liquid, is available in drums, tankwagons, and tankcars.

Ultra Chemical Works, Inc., Paterson, N. J.

For additional data, request item E-116, using business reply card on page 230.

Permanent Magnetic Pulley

A new non-electric permanent magnetic pulley has been designated Power-Plus. The pulley is designed for use as a head end pulley or as an idler pulley in belt conveyor systems and is furnished in 57 standard sizes. For separating tramp metals from goods in process, the pulley is crowned to prevent belt weaving and runout and to assist in equalizing the conveyed material as it passes over the pulley.

Standard or special length shafts are available to fit new or existing applications without changing bearings or shaft mountings. Head plates are cast aluminum. According to the manufacturer, there is no loss of magnetic flux to the shaft to attract injurious metal particles to the bearing areas.

The Homer Manufacturing Co., Inc., Lima, Ohio.

For additional data, request item E-117, using business reply card on page 230.

Book on Teamwork in Business and Industry

Executives of Johnson & Johnson have written a timely book devoted to the improvement of teamwork and of productivity throughout business and industry.

The book bears the title, *Training Employees and Managers for Production and Teamwork*, and shows that

Darnell Casters

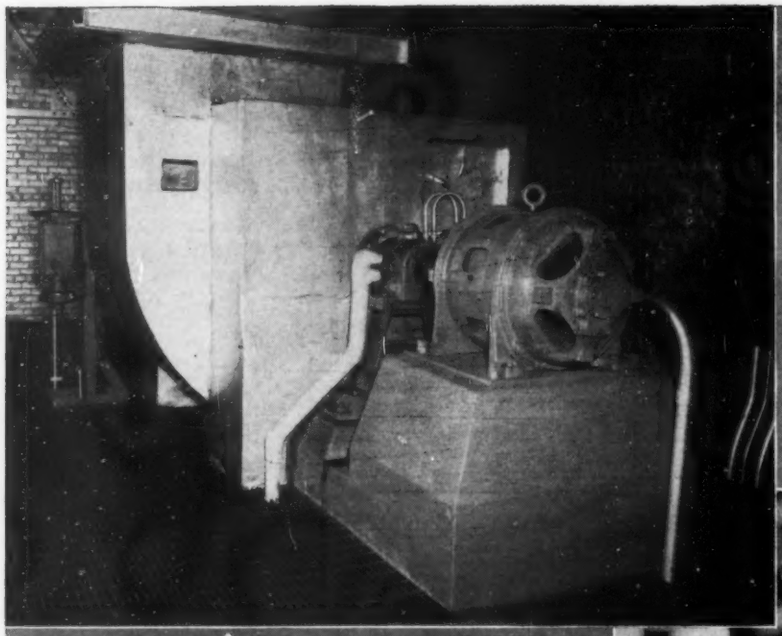
No Question ABOUT PERFORMANCE!

Choose just the right caster or wheel for your needs from the Darnell line of nearly 4000 types. These precision made casters and wheels will help you speed up production . . . will pay for themselves many times over.

Write for Free Darnell Manual

DARNELL CORP. LTD. Long Beach 4, Calif.

60 Walker St., New York 13, N. Y.
36 N. Clinton, Chicago 6, Ill.



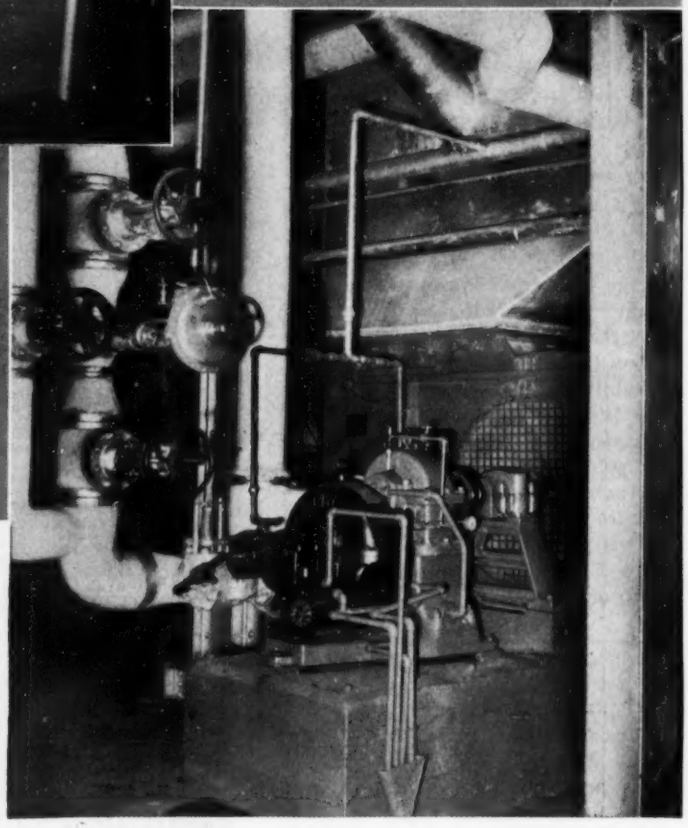
ENDURANCE

that saves you

POWER DOLLARS

is built into every

"Buffalo" DRAFT FAN



WHETHER your boilers require forced or induced draft, you save money with "Buffalo". These ruggedly built fans not only do an efficient job of stepping up horsepower, but you have fewer time-outs for repair—fewer time-outs that hold up vital plant functions. This endurance comes from HEAVY construction in all fan parts that wear out—blades, shafts, bearings. A BIG way to save money in your plant is to start with power costs—using "Buffalo" Draft Fans, the kind with inbuilt staying power!

Yours on Request

Bulletins 3113-A and 3190-B give money-saving facts on both induced and forced draft fans. Write for your copies!

Designed from Proven Principles In FAN ENGINEERING!

FAN ENGINEERING, the Bible of air engineers, gives you 808 pages of helpful, sound facts on every phase of air handling, including draft problems. Write for your copy today! Pocket size, easy to read!

Price **$6.00** POST PAID IN USA

"Buffalo" FIRST FOR FANS

BUFFALO FORGE COMPANY

175 MORTIMER ST. BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Branch offices in all Principal Cities

VENTILATING FORCED DRAFT · AIR WASHING COOLING · AIR TEMPERING HEATING · INDUCED DRAFT EXHAUSTING PRESSURE BLOWING

training within industry is the solution to the indifference, inefficiency and lack of teamwork which exists in many offices and shops today.

Published recently by Ronald Press, the book was written by William McCord, director of industrial relations for personal products; Dr. Earl Planty, executive counselor at Johnson & Johnson; and Dr. Carlos Efferson of Gainesville, Georgia, staff training director for Chicopee Manufacturing Corporation, another J&J subsidiary.

The book attempts to answer the questions of executives, supervisors, and small business men who want to know what training is and what it will do in return for the time, trouble and cost. It deals with the organization and installation of training programs in small and large units. Recommendations are supported by examples chosen from successful training programs in business and industry.

There are chapters devoted to training in offices, in small businesses and in large industry. Other chapters describe supervisor training, economic training and orientation training for new workers, as well as technical, professional and skill training. The need for cooperation, teamwork and increased productivity in all areas of life today is emphasized.

On the supervisor and executive level there is training in grievance handling, constructive discipline, morale building, costs and finances, individual differences, planning and organizing, conference leadership, self-improvement, waste reduction, labor relations and a host of other general and specific subjects.

Chemical for Dyers and Finishers

A chemical called Sequestrene is available commercially as a purified free acid and as a technical sodium salt. According to the announcement, Sequestrene has ability to bind calcium, magnesium, iron, copper, zinc, and other metals in a soluble but non-ionized form, stable over a wide range of pH and temperature.

It can be used in solubilizing and dispersing many types of dyes and pigments; preventing shade changes in dyeings as the result of trace metals; preventing spotting and reduced color yield and several other applications.

The Alrose Chemical Company, Providence, R. I.

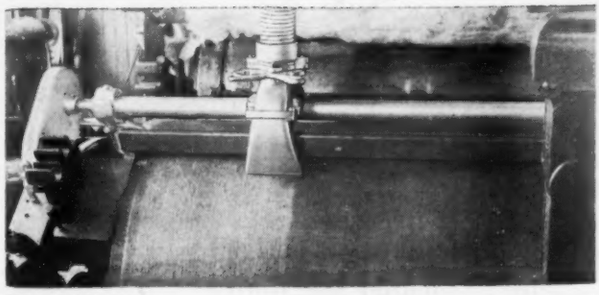
For additional data, request item E-175, using business reply card on page 230.

Standard Soiled Fabric Samples Available

The availability of standard soiled cotton fabrics as prepared by a group at Pennsylvania State College under the supervision of Prof. Pauline Beery Mack has been announced.

After soiling, every piece is lightly washed to remove loosely adherent soil and read with the Hunter Reflectometer. It must agree with a reflectance of 27% within a tolerance of ± 2%. Every tenth swatch is washed in an 8-step washing cycle with neutral soap and soda ash. To be acceptable it must give a soil removal efficiency in terms of brightness re-

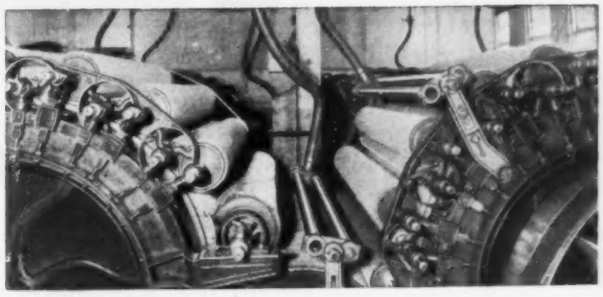
ABINGTON VACUUM CARD STRIPPING for COTTON, WOOLEN & WORSTED CARDS



COTTON Abington Vacuum Stripper as used on revolving top flat card strips cylinder and doffer simultaneously.

Nearly 900 mills have turned a nuisance operation into an advantage, obtaining greater production, improved quality and lower costs as follows:

1. Production increased 4% or more because of less down time for stripping.
2. Direct stripping cost reduced 60% to 90%.
3. Stripping 100% by vacuum (no brush touches the clothing) keeps card wires in better condition with less frequent grinding.
4. Extra thorough stripping gives cleaner sliver, less fly, better quality of product. 100% dust free.



WOOL Showing woolen card cylinder and doffer equipped with Abington Vacuum Stripper, which feeds across automatically.

Abington Vacuum Stripping saves 60% to 90% of Stripping cost through its automatic features.

Down time for stripping is materially reduced. Often the increased production equals an extra set of cards. 45 minutes makes a color change, instead of 1 to 3 hours.

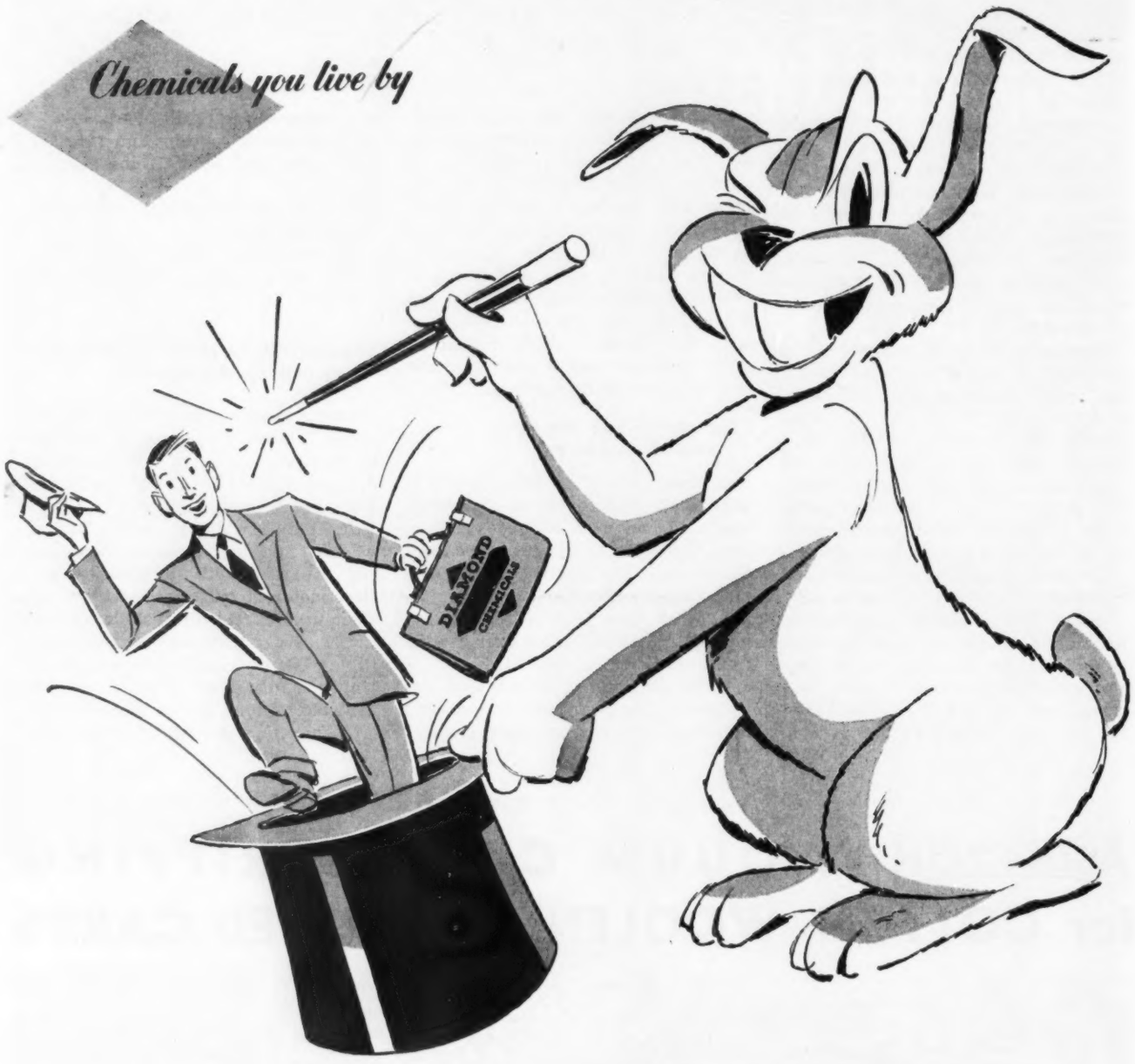
Abington Vacuum Stripping assures thorough removal of embedded dirt and fibre; 100% dust-free.

Request Bulletins on: Vacuum Card Strippers • Yarn Dyeing Systems • Weaver's Knotters

ABINGTON TEXTILE MCHY. WKS. 19 CONGRESS STREET BOSTON, MASS., U.S.A.

Plant: Abington, Mass. *Southern Office:* Johnston Bldg., Charlotte, N. C.

Chemicals you live by



THERE'S ALWAYS A NEW TRICK YOU MIGHT USE

Do you ever have a problem in handling and storing chemicals?

DIAMOND ALKALI makes a minor science of handling and storing chemicals. Your DIAMOND salesman will be glad to help you improve your methods. He knows a lot about chemicals beyond just the selling of them. Whatever your difficulty is, the chances are he'll be able to correct the trouble by one or another of the latest developments our DIAMOND men are posted on.

DIAMOND ALKALI COMPANY • CLEVELAND 14, OHIO

BICARBONATE OF SODA • SODA ASH • CAUSTIC SODA • SILICATES • BICHROMATES

DIAMOND ALKALI CHEMICALS

BALE CLAMP FOR LIFT TRUCK

This new bale clamp picks up, handles, transports and stacks large bulky bales of cotton, wool, waste, and other baled materials handled by lift trucks.

When the attachment is installed on the lift truck, a lift of 130 inches may be obtained. A maximum free lift of 65 inches with lowered mast height of 83 inches can be obtained without sacrificing standard capacity ratings.

Towmotor Corporation, 1226 E. 152nd St., Cleveland, Ohio.

For additional data, request item E-133, using business reply card on page 230.

gained of 50 ± 2.5% after five consecutive washes.

The swatches are 5 X 12 inches, conforming to a standard of the National Bureau of Standards as to desirable size, to permit four fold-overs for reading in the reflectometer. When prepared, the swatches are given consecutive numbers. The unit package for sale consists of 9 consecutively numbered swatches, the tenth numbered swatch of that series having been used for standardization.

Foster D. Snell, Inc., 29 West 15th Street, New York 11, N. Y.

For additional data, request item E-103, using business reply card on page 230.

Industrial Truck Batteries Charged "On-the-Spot"

A new Rectox copper oxide battery charger, particularly suited for "on-the-spot" charging of industrial truck batteries in warehouses and industrial plants, is available.

The charger features the saturable reactor control. This reactor provides

STEEL FABRICATION

THE FIRE OF EXPERIENCE

There are three essential factors in carbon and stainless steel fabrication. First . . . the EXPERIENCE of the fabricator in producing your products exactly as you specify them. Second . . . ENGINEERING ABILITY to accomplish difficult or unusual jobs. Third . . . FACILITIES to plan, prepare and deliver on schedule. Truitt has all three . . . experience, engineering ability and facilities.

Whether it's variety work, special parts for the industrial plant, or contract fabrication . . . Truitt will be glad to quote on your inquiry.

• • •

Fuel Tanks — Vats

Stainless and Carbon Steel Fabrications

TRUITT

MANUFACTURING COMPANY

• GREENSBORO, NORTH CAROLINA •

More Profits out of Men's Hose

These mercerized men's half hose had to be color-bright, color-fast and soft-to-the-touch to tickle the fancy of buyers. In order to obtain the fetching bold pattern and buy-appeal finish, both dyer and chemist combined their efforts in choice and application of proper dyes and finishes.

If you are experiencing difficulties with color or softness on men's half hose in your mill, find out how Amalgamated Products and Services can help you.

Amalgamated Products include Hosiery Finishes, Dyeing Assistants, Fabric Finishes and Scouring Agents. Amalgamated Field Representatives are men experienced in assisting with textile chemical problems. A modern research and production laboratory, fully equipped with facilities, is available to you for test and research. For quality fabric production and higher profits, call on Amalgamated.

AMALGAMATED CHEMICAL CORP., Phila. 34, Pa.
Southern Division: 1819 Spring Garden Street, Greensboro, N. C.

Amalgamated

an adjustment for output by variation of inductance. The charger is easy to adjust. The use of a rheostat control, which can even be adjusted while energized, eliminates the necessity of constantly changing taps for high rate, low rate, ageing and line voltage variation. The charging cycle is completely automatic after preliminary selection of the rate by the turn of a dial.

The Rectox charger can be obtained as a combination unit to charge either lead-acid or nickel-alkaline batteries. Either type of battery can be fully charged in less than eight hours. With the addition of a "plug-in" charge control panel, the simple change from a nickel-alkaline charger to a lead-acid charger can be made easily and quickly in the field. The charger is designed for either 230 to 460 volts.

Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

For additional data, request item E-108, using business reply card on page 230.

Magnifier-Illuminator

A new Magnifier-Illuminator has been designed which combines in one useful unit the means for lighting and enlarging objects for visual inspection or fine work in laboratories.

The compact viewing head of the new unit contains the light source (three six-watt, 9-inch fluorescent tubes) and a high grade 5-inch lens which brings objects into sharp focus at 13 inches.

Fisher Scientific Co., 717 Forbes St., Pittsburgh, Pa.

For additional data, request item E-176, using business reply card on page 230.

"Pepperell's Progress"

Pepperell's Progress (511 pages) by Evelyn H. Knowlton is one of a series of Harvard studies in business history which traces the story of Pepperell Manufacturing Company from its organization in 1844 to 1945. The book deals with procurement of supplies, private finance, production, and marketing techniques.

In writing the story, the author had access to the original records of the company and also interviewed older officers and key men in the business today. It is published by Harvard University Press, Cambridge, Mass.

Around the corner or around the world — Comer Serves!

NEED TEXTILE MACHINERY?

Wherever you are, whatever the need, it pays to

CONTACT COMER!

Maybe you only need two cards to bring your production up to requirements.

In this case one little postcard to Comer and they get busy! Chances are, in Comer's file, made up of information from every great textile center, there is the name of an operator who wants to sell just the equipment you need—or if you want to sell, then Comer knows who wants to buy.

Whether it's a spinning mill or an order of bobbin gears—your inquiry gets the same prompt attention.

Whatever the need—wherever you are, call, wire or write Comer today!

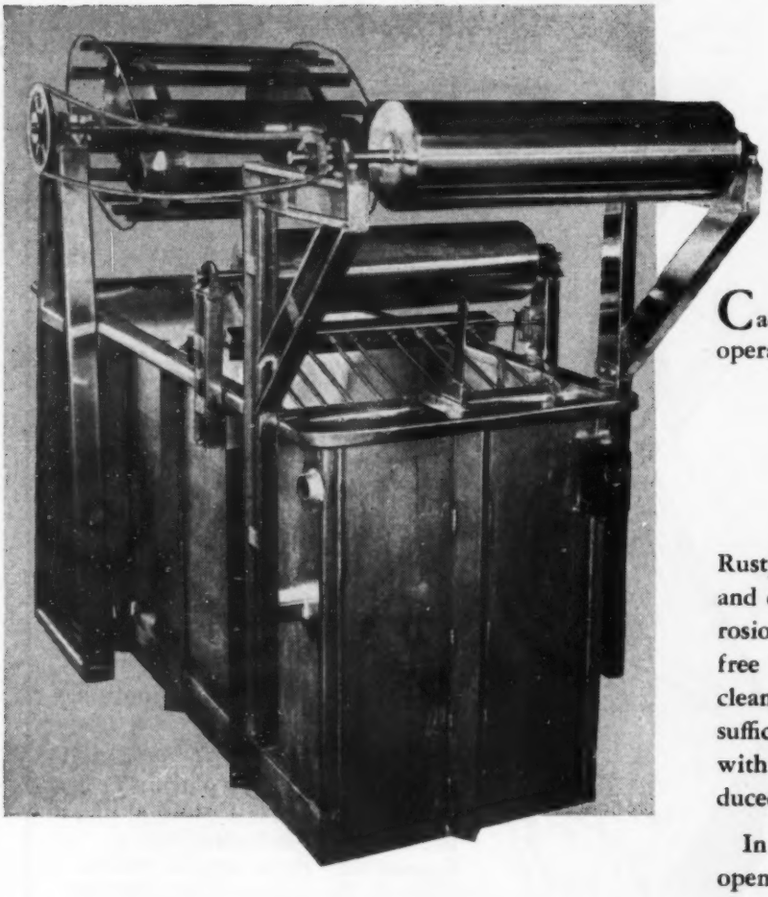
"SALES AROUND THE WORLD"

COMER MACHINERY COMPANY

Cable Address: COMACH

308 Ivy Street, N. E.—Atlanta, Georgia, U. S. A. Tel. Cypress 2505

Keep operating costs down with this all-Monel dye beck



Cadgene all-Monel* dye becks will help you cut operating expenses in *three* important ways . . .

1. **Longer equipment service life**
2. **Low maintenance costs**
3. **No losses from rust stains and contaminated dyes.**

Rustproof Monel withstands concentrated brines and caustic solutions without pitting or stress corrosion cracking . . . which means long and trouble-free life for Cadgene dye becks. Monel is easy to clean; merely flushing with tap water is usually sufficient. And since Monel does not readily react with dye solutions, metallic contamination is reduced to the vanishing point.

In Cadgene becks, the dye bath is heated by an open steam coil. The bath temperature is thermostatically regulated. Reel speed is governed by a Sterling Speedtrol, and is variable from 8 to 30 rpm. Tank, supports, and fabric contact surfaces are constructed of #11 gauge sheet Monel, with corrosion-resisting welded joints throughout. All-Monel Cadgene dye becks are available in several sizes, from 2 to 20 feet.

Whenever you need repairs or new equipment . . . consider the many advantages of Monel. Experienced Inco Nickel Alloy fabricators will gladly study your requirements. Or, if you prefer to do your own fabricating, your nearest Inco distributor stocks Monel in sheet, rod, tubing, wire cloth, Anchorfast nails and other fastenings.

Inco's Technical Service Department is always ready to help you solve metal and fabrication problems.

*Reg. U. S. Pat. Off.

• • •

For further information and prices on all—Monel Cadgene dye becks, write directly to:

CADGENE MACHINERY COMPANY
Patterson, N. J.

• • •

EMBLEM OF SERVICE
INCO
TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

MONEL...*for Minimum Maintenance*

Running Count Recording Instrument

A new recording instrument, known as the Running-Count Recorder, has been announced. The newly developed recorder plots on a circular chart, a curve of number of operations against time. It records the total count of intermittent operations and the time at which each one occurs, and is used on production machinery to record work-producing operations or number of pieces produced.

The hourly rate of production can be read from the chart. This gives information regarding effect of fatigue on operators, variations in production, effectiveness of job training programs, and the effect of variations in working conditions. Excessive down time is easily read on the chart.

The Bristol Company, Waterbury, Conn.

For additional data, request item E-177, using business reply card on page 230.

Electric Steam Cleaner

A portable, all electric, industrial steam cleaner is now in production. This apparatus is known as the Speedylectric Steam-Jet Cleaner and is designed to meet the demand for a portable heavy-duty steam cleaning unit.

According to the manufacturer, the Speedylectric Steam-Jet Cleaner has many industrial plant applications: cleaning walls, ceilings, windows, and fixtures; sterilizing and cleaning washrooms; degreasing machinery, equipment, parts and tools.

Livingstone Engineering Company, 100 Grove St., Worcester, Mass.

For additional data, request item E-178, using business reply card on page 230.

Harvard Trip Balance in Stainless Steel

The Harvard Trip Balance is equipped with 6" diameter stainless steel plates at the points of continuous usage—where all-element resistance is required. Heat, corrosion, chemicals or accidental, sharp blows cannot possibly affect the stainless steel weighing platforms or the stainless steel relief etched beams that give clear, accurate readings, according to the manufacturer.

The patented bearing construction, employing self-aligning, polished

You take a chance as long as human eyes must read . . . human minds must remember . . . and human hands must write weight figures! Human errors at weighing points *directly affect your costs, profits and customer relations.* Stop these losses now with PRINTED weights—today's better way to weigh!

PRINTWEIGH

STOPS HUMAN ERRORS

Toledo PRINTWEIGH Scales give you big, clear *printed* figures . . . *accurate printed records* of each weighing operation . . . positive assurance that your weight facts are right *every* time! Prints on thick tickets . . . on large or small sheets . . . on strips . . . with extra copies. Split-second speed! Keeps weight records *right* in receiving, shipping, stock rooms, batching and many other weighing operations for industry. Write for bulletin 2021. Toledo Scale Company, Toledo 12, Ohio.

TOLEDO

HEADQUARTERS FOR SCALES

The Weaver's Friend

KEESTAR KEE PRODUCTS

Call your
KEEVER SALES - SERVICE MAN
On Slashing Problems

CHARLES C. SWITZER
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E. HAYS REYNOLDS
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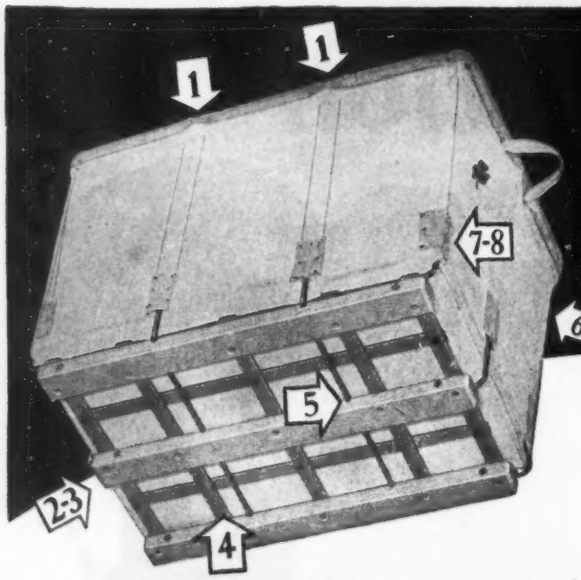
Victor MILL STARCH

ALWAYS UNIFORM

TEXTILE SALES DIVISION • THE KEEVER STARCH CO.
1200 WOODSIDE BUILDING, GREENVILLE, SOUTH CAROLINA
Plant and Home Office, Columbus 15, Ohio



Compare point for point
with any other basket, and you'll use

SHAMROCK

CANVAS BASKETS, HAMPERS, TRUCKS

***Only* Shamrocks give you**
ALL THESE FEATURES

1. Spring steel used in frame is actually 25% higher tensile strength. 2. Full 2" x 1" wood runners. 3. Runners cross-riveted at ends to prevent splitting. (No. 12, 14, 15 and 21 styles.) 4. Rust-proof steel bottom. 5. All runners cross-grooved. 6. Extra heavy duck. Meets government specifications; actually 20% stronger. 7. End of sewing seams brass riveted. 8. Leather reinforcements around top and ends of strips on all popular styles. (Casters on trucks of proper capacity to carry load and give mobility.)

Write for complete catalog—MEESE, Inc., Madison, Ind.
227 Miller Rd.

Ask your jobber!

agate bearings against precision hollow ground tool steel knife edges, insures the maximum sensitivity attainable with this type of balance. The rigid cast iron beam is capable of withstanding heavy overloading without danger of deflection. All bearing parts are properly hardened and all vital components are heavily plated.

Ohaus Scale Corp., 10-14 Hobson Street, Newark 8, New Jersey.

For additional data, request item E-179, using business reply card on page 230.

Lift Truck Improvements Announced by Hyster

A new carton clamp for handling goods in paper board cartons by lift truck without the necessity of pallets is now available. This is one of several optional devices for the hydraulic-controlled Load Grab, an attachment which squeezes its load.

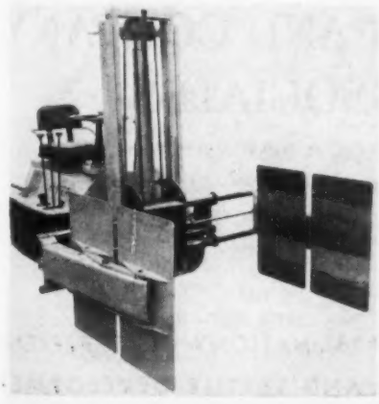
The tines of the clamp may be opened to a maximum spread of 59 inches and closed to a minimum of 14 inches. Abrasive strips on the metal plates prevent slipping of the load. The device is designed for a handling capacity of 1,700 pounds with the 2,000-pound truck.

Another recent improvement announced by this manufacturer is the revolving apron attachment which makes possible the turning over or dumping of lift truck loads by a hydraulic mechanism. A revolving head or turn-table on which conventional fork arms are mounted, turns 180 degrees in either direction from center.

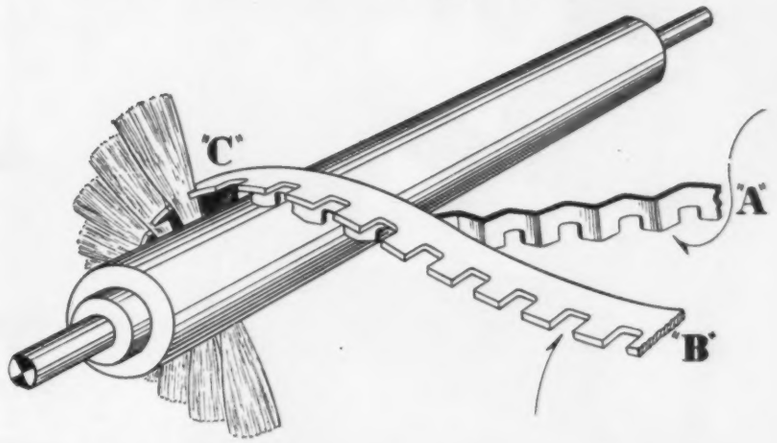
Hyster Company, Portland 8, Oregon.

For additional data, request item E-129, using business reply card on page 230.

Fork truck equipped with clamp for handling goods in paper board cartons (Hyster).



Unique brush construction assures longer life



How Bristle Is Wound on JENKINS' METLKOR* Brushes

"A"—a metal strip, notched to hold tufts of bristle, wound around the metal core, resting on - - -

"B" —a similar metal strip, wound edgewise on the metal core at point- - -

"C"—where tufts of bristle are inserted and sealed in place with special plastic cement, which seals metal strips "A" and "B" completely, surrounds and penetrates the base of the tufts, and makes "Metlkor" brushes permanently solvent-proof, easy to clean, ideal for applying color, for raising and laying, etc.

THE CORES are made of aluminum or cold drawn steel. They cannot sag or split as wood cores do.

BRISTLE is wound on the metal cores by a patented process, that makes METLKOR cylinders easy to clean. Because the bristle can be replaced as it wears down, the life of this brush is the longest of any we know.

We Make Brushes for—

Brushing prior to printing • Color-Furnishing • Reed Cleaning • Blanket Washing and Drying • Shearing • Brushing • Pressing • Soaping (for screen printing) • Singeing • Polishing • Sizing • Flock Raising and Laying • Combing • Steam Brushing • Teasel Cleaning • Carding • Shade Cloth Coating • Pin Tentering • Thread Dressing, etc.

**Trademark Reg. Pending*

Write today for catalog showing the complete line of Jenkins' brushes for the textile industry.

INDUSTRIAL Brushes

JENKINS METLKOR

M. W. JENKINS' SONS, INC.

72 Years of Industrial Brush Know-How

Cedar Grove, Essex County, New Jersey

PRECISION

KENTEX Aprons

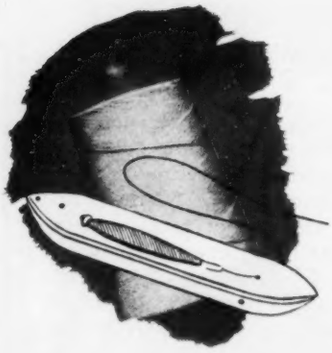
Painstaking care safeguards the *absolute uniformity* of Kentex Aprons. Careful, individual checks are made throughout the stripping, cutting and sealing processes to be certain that they are absolutely uniform in thickness, width, length and circumference. That's why we can *guarantee* you a sure fit with Kentex!

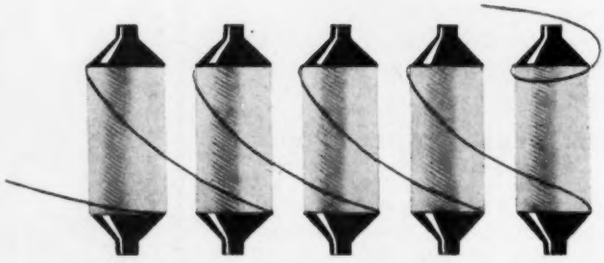
If you haven't yet used Kentex Aprons, you can try them without cost on your frames. Just send us your specifications and we'll be glad to send free samples and quote you prices.

TEXTILE APRON COMPANY

EAST POINT, GEORGIA

J. B. KENNINGTON, OWNER





Textile ENGINEERING

Plans and designs for all types of projects related to the textile industry. Appraisals, modernization studies, machinery layouts, air-conditioning, power and water filtration plants, and other phases of textile engineering.

ROBERT AND COMPANY ASSOCIATES

INCORPORATED

Architects and Engineers

ATLANTA

THIRTY-ONE YEARS' NATIONWIDE EXPERIENCE IN INDUSTRIAL AND TEXTILE DEVELOPMENT

Cartridge Demineralizer

A re-designed Filt-R-Stil cartridge demineralizer for delivering the low-cost chemical equivalent of distilled water, without heat and at a maximum rate of 10 gallons per hour, has been announced.

The new unit consists of three principal parts: a disposal cartridge containing ion-exchange resins, a bracket or support for the cartridge, and an electrical conductivity indicator which shows the quality of all treated water and indicates when the cartridge is exhausted and needs replacement.

American Cyanamid Company, Ion Exchange Products Department, 30 Rockefeller Plaza, New York 20, N. Y.

For additional data, request item E-180, using business reply card on page 230.

Fluorescent Lamp and Starter Tester

A testing apparatus is available for use in saving time and labor by pre-testing fluorescent lamps and starters before they are installed in fixtures It is said to be ideal for maintenance departments to test lamps and starters to determine whether they are in good operating condition.

Compco Corporation, 2251 West St. Paul Avenue, Chicago 47, Ill.

For additional data, request item E-181, using business reply card on page 230.

Offset Ratchet Screwdriver

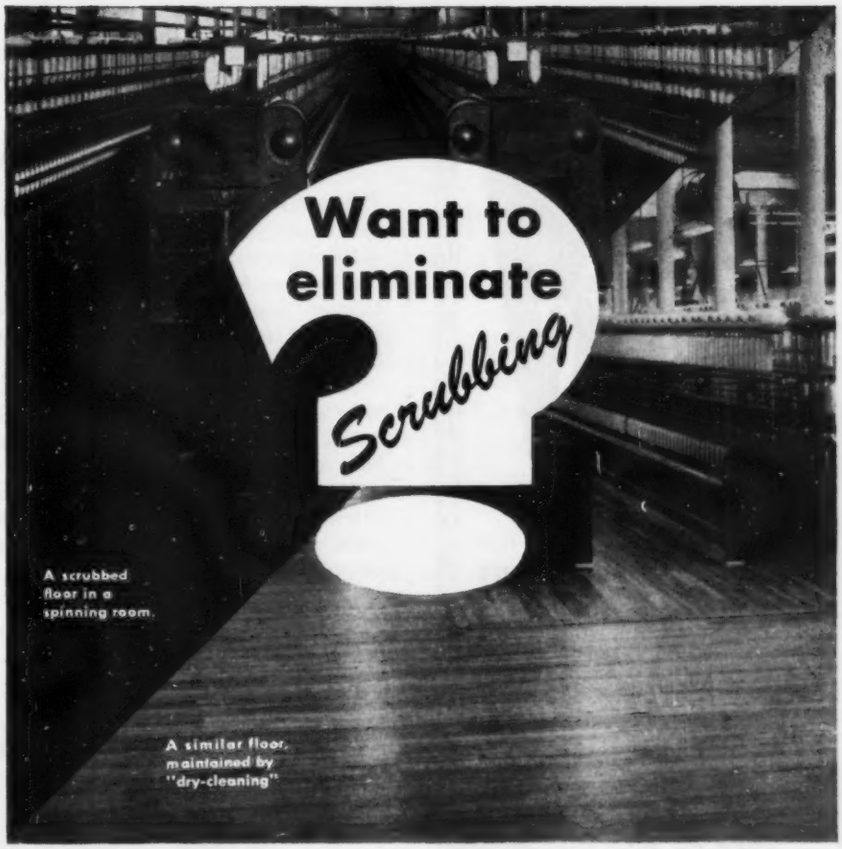
A new screwdriver, designated Aero No. 5200, is designed to permit the application of leverage to drive screws and to reach into areas inaccessible to common screwdrivers.

The ratchet permits use of this tool in confined spaces and the reversing lever makes the tool suitable to drive or remove screws. The screwdriver has two blades; one for large and one for small screws. It has a ball and grip to prevent injury to hand. Overall length is 3⅞".

The standard tool is made for slotted screws only. It is available with special drivers for Reed & Prince, Phillips and other screws for assembly operations.

Aero Tool Company, 6930 Avalon Blvd., Los Angeles 3, California.

For additional data, request item E-182, using business reply card on page 230.



...and get cleaner floors for less!

FAST, EASY-TO-USE Tennant Floor Machine whisks grime from floors and picks it up in 1 operation. Various models for 8", 12" or 16" drum-type accessories for complete reconditioning and maintenance of mill floors. Has semi self-propelling action.

What a difference when you stop scrubbing and use *modern* methods! Same traffic, oil and dirt conditions—but the "dry cleaned" floor is brighter . . . less slippery . . . easier to clean, and it *costs less to maintain.*

TENNANT FLOOR MAINTENANCE SYSTEM

1. Restores life to your floors. Gets rid of dark, rough, water-softened fibers . . . assures a clean, smooth, new-wood surface. Brings back original beauty of floor.

2. Hardens surface to resist wear. Special sealing process makes floor resistant to dirt penetration and traffic wear. Makes floor lustrous, easy to keep clean.

3. Dry Cleans to keep floor bright. A fast easy job with a Tennant machine; cleans floor like magic! Saves manhours, keeps floor smooth, safe, attractive.

G. H. TENNANT CO.
2585 North Second Street
Minneapolis 11, Minnesota

Write Today!
Send for NEW 4-page illustrated bulletin on "How to Get Better Results in Textile Floor Maintenance."

The way to finer floors
TENNANT
Floor Maintenance System
Established 1870

FLOORS, LIKE ROADS ...ARE SAFER *when dry*

Eliminate the danger and costly damage to supplies and machinery by leaks and water-seepage . . . use STONHARD STONTITE. Any maintenance man can effectively *stop leaks*—from hair-cracks to actual breaks (even against direct hydrostatic pressure) with STONHARD STONTITE. Used successfully by Industries, Railroads, Municipalities and Public Utilities all over the world.

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Send me a FREE "Stontite Folder"

Firm .....

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Address .....

City ..... Zone ..... State .....

New Line of Washers Developed by Cook-P&N

Several new machines were recently announced by this manufacturer:

Four-tank open width processing machine with individual motor drive. Bottom squeeze rolls are made of stainless steel and top rolls are rubber covered.

A new stainless steel slack washer is of sturdy design with box type reinforcing, solid oval reel, and rubber covered squeeze rolls.

The new 100-inch face three-roll microset padder has two stainless steel covered rolls and one rubber covered roll.

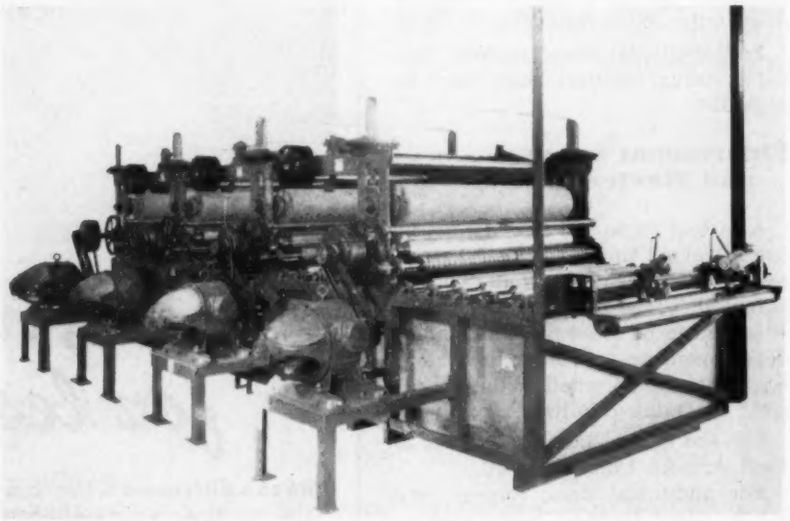
A new vertical rope squeezer. Pressure is applied through weight and compound leverage with mechanical lifting device.

Designed for high speed operation is a new three-roll mercerizing padder. Features include pneumatic pressure, two stainless steel covered rolls, one rubber covered roll.

Finally, a newly designed vertical high speed singeing machine features all-steel fabrication.

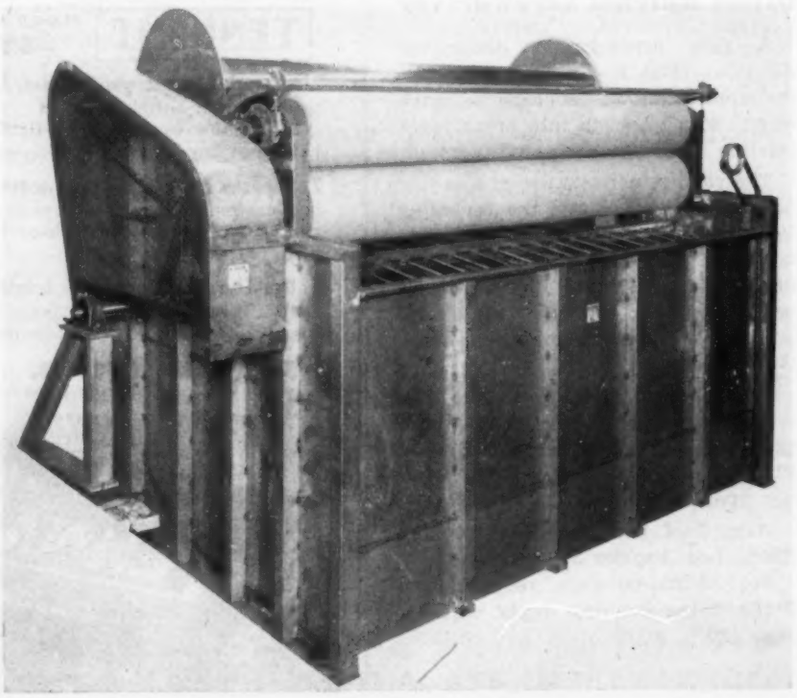
Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass.

For additional data, request item E-185, using business reply card on page 230.



Above, four-tank open width washer with individual motor drives.

Below, stainless steel slack washer, Model B (Cook-P&N).



CALCO dyelines

No. 8 of a series

PUBLISHED BY AMERICAN Cyanamid COMPANY / CALCO CHEMICAL DIVISION
Bound Brook, New Jersey
New York • Chicago • Boston • Philadelphia • Charlotte • Providence

METALLIZED DYES FIND MANY USES IN WOOL DYEING

Calcofast* wool dyes, or metallized dyes, offer many advantages to the dyer and general public. They produce consistently level uniform shades

with excellent fastness to light, washing, sea water, perspiration, carbonizing and fulling. They are especially adapted to the dyeing of wool for sportswear fabrics, suiting, neckwear, knitting yarns for sweaters or bathing suits, and hosiery yarns.

Calcofast wool dyes are recommended for a full range of shades from pastels to deep, rich tones. They can be applied to carbonized wool cloth or stock, without neutralization, with rinsing as the only predyeing treatment necessary.

If additional brightness is required, selected acid dyes may be applied in the same bath with Calcofast wool dyes. The proper selection of the acid dyes to be used is important here and we suggest contacting your Calco representative for assistance.

Calcofast Wool Bordeaux RB Conc. is one of the outstanding metallized dyes, useful as a base shade for fast reds, crimsons, burgundies and maroons.

Calcofast Wool Blue 2G and Calcofast Wool Yellow N are also popular as blue and yellow elements, and Calcofast Wool Pink N is excellent for a range of pink shades.

The entire line of Calcofast wool dyes offers wool dyers good fastness, pleasing shades and ease of application to all types of wool materials.

*TRADEMARK

Tips on Selection of Dyes

Accurate data on the dyeing behavior of direct dyes is important in the economical production of level, well-penetrated dyeings of maximum fastness, especially on material containing mixed fibers and for application in low ratios of fiber to dyebath.

From the viewpoint of dyeing behavior, direct dyes which are to be used in other than extremely high-speed continuous operations should be selected; first, for ability to level up rapidly, and, secondly, for a slow speed of exhaust.

Three basic factors in dyeing behavior are:

- The initial degree of exhaust of the dye on the fiber
- The diffusion rate of the dye within the fiber
- The type of equilibrium between dye, fiber and dyebath.

Care should be taken to avoid those direct dyes which exhaust quickly and which diffuse slowly within the fiber and are unable to migrate with facility between fiber and dyebath.

New Printing Dyes

During the past year quite a number of new additions have been made to the line of Calco printing dyes in the category of vat dyes, soluble vat dyes and stabilized azoics. They are very desirable for either roller printing or screen printing, and are unique in offering very superior light fastness to that obtainable by the usual vat dyes.

Every print shop should investigate the superior qualities of these dyes for their production.

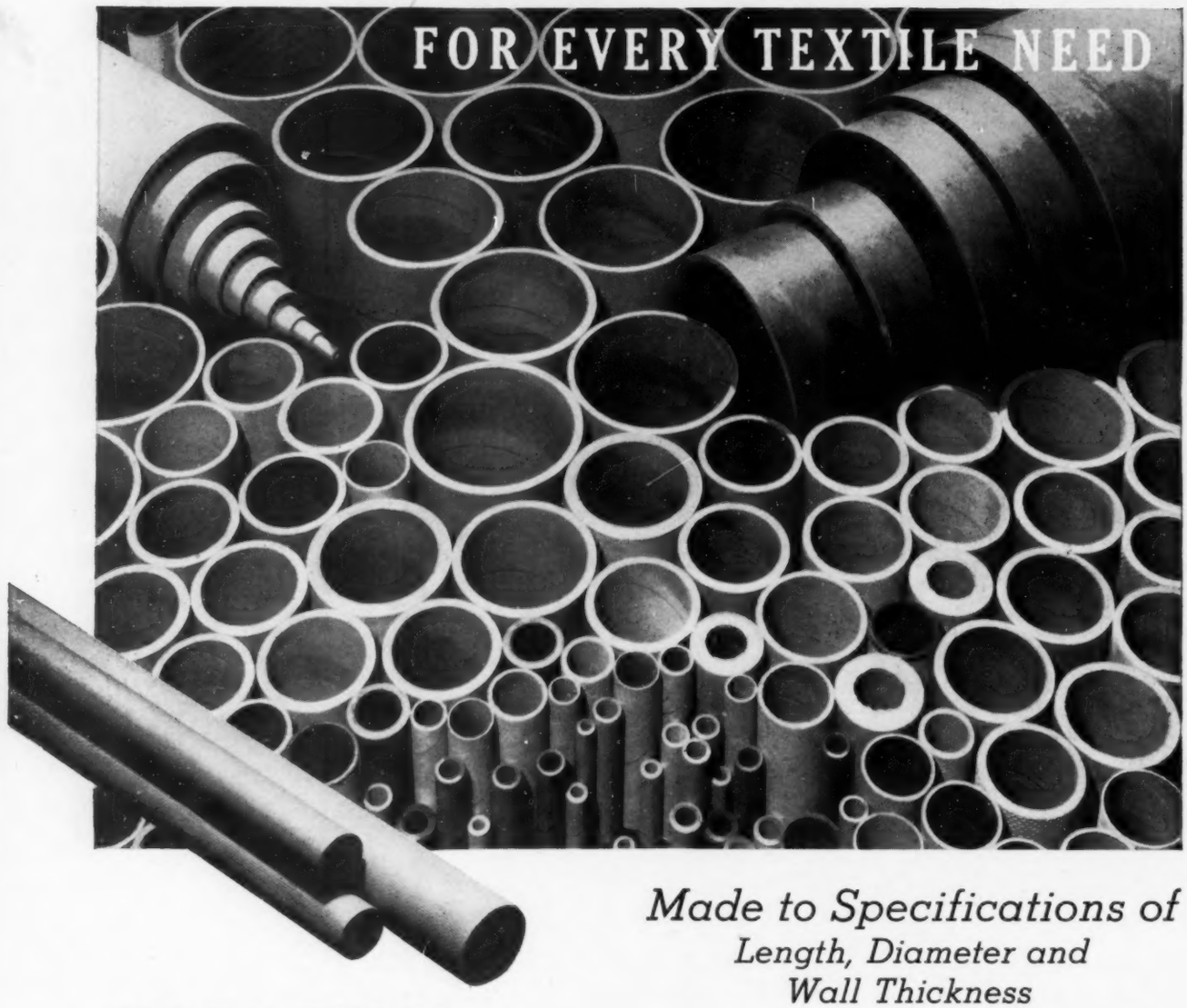
FOR THE TEXTILE BOOKSHELF

Application and Properties of Vat Dyes (Calco Technical Bulletin No. 802)—Contains information about vat dyeing procedure and practical methods of applying Calco Vat Dyes; supported by tables giving fastness properties, relative strengths of Calco Vat Dyes; reduction and dyeing data. The reduction and dyeing behavior of individual vat dyes is discussed.

"Scientific Study of Rayon Dyeing" (Calco Technical Bulletin No. 806)—by G. L. Royer, Research Department. A review of work carried on at Calco on the study of the factors which affect the dyeing of rayon.

12 time clocks are punched at Calco at least 8,000 times daily.

TUBES



CLOTH TUBES
LOOM TUBES
YARN TUBES
MAILING TUBES

Made to Specifications of
Length, Diameter and
Wall Thickness

Printed
Embossed
Treated
Unitex Surface
(FLOCKED)
Velvet Surface
Smooth Surface
Colored Ends
Burnished Ends

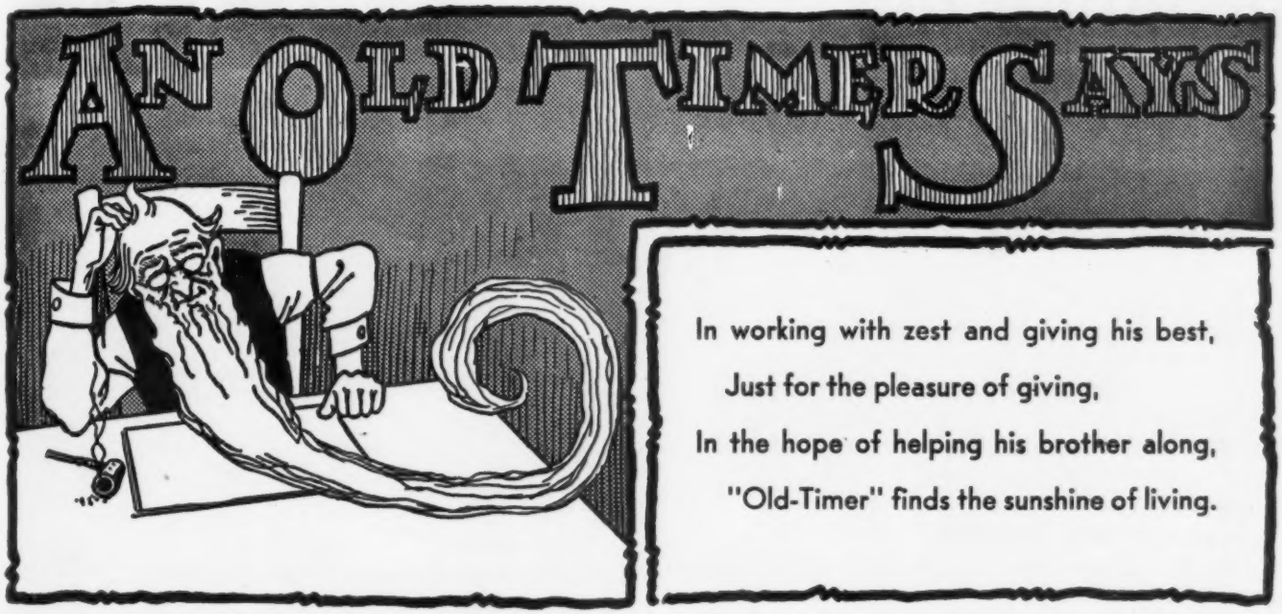
Parallel or Spiral Wound

sonoco 50th SERVES THE WORLD ANNIVERSARY YEAR

Sonoco Products Company

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Random Thoughts

Get Operative to Appreciate Job

DO YOUR employees realize how much money has been invested by the firm to give each one of them a job? OLD-TIMER obtained that information from a large mill some years ago, and to everyone's surprise it showed that $8500 was invested for each and every employee on the mill's pay roll. (This did not include outside help and office force.)

If OLD-TIMER put $8500 of his money in 6% preferred stock of that mill, he would draw $510 per year on his investment, while an operative at $40 per week would draw over $2,000. Of course, a weaver on say 50 looms, each costing $700, would represent an investment of $35,000, plus cost of building, etc.

Can't some of you smart overseers, superintendents, or managers start an educational campaign to show employees the faith investors have in them. Who knows, it might be possible to get some employees to be a little more appreciative of their jobs.

Profit by Experience of Others

THE "HIGH Road to Achievement" has been well staked out by successful men who have gone before you. You do not have to grope around through the woods and underbrush hunting for that road. Simply study the methods used by those successful men and follow them. The foregoing admonition is a good one, but most men are like the sons of successful men—they will not profit by dad's experiences. They must make the same darn, fool mistakes dad made.

Can you see a grievance or complaint coming before it gets there? If you can, promotion will slip up on you before you know it.

Card Setting is Main Problem?

THE OVERSEER'S and superintendent's main problem today is to see that cards are set exactly to gauge, that spindles are plumb, that loom shuttles are boxing properly with harnesses, and that other parts of the loom are set as directed.

Did we say *main* problem? Well, we missed, because the overseer's, superintendent's, and manager's *main* problem today is to *inspire* enthusiasm in section men, machine operators, oilers, and all other employees.

Sell each individual on the fact that he is a part of the job as a whole, and that it takes everybody pulling in the same direction to enable the firm to make the money which will result in higher wages.

There is no greater achievement for any operating executive than the ability to inspire enthusiasm in operatives.

3 Features designed for LOW COST DYEING

1 *This Dyebox is Fully Enclosed*

— to keep heat and moisture where they belong, in the box; to save fuel, steam, water and dyestuffs; . . . to end dyehouse fog; to increase production per man hour; to give you better work.

2 *This Dyebox is Stainless Steel*

. . . to clean in seconds with a quick rinse; . . . to eliminate boil outs; . . . to end discoloration of fabric; . . . to change from dark to light runs in a few seconds; . . . to give you more runs per day at lower cost.

3 *This Dyebox is Blickman Built*

. . . to be as accessible as an open box with none of the disadvantages; . . . to give dyers every design feature for speedier loading, heating, lacing, unloading and changeover; . . . to assure trouble free operation for many years.

Write for bulletin 7034

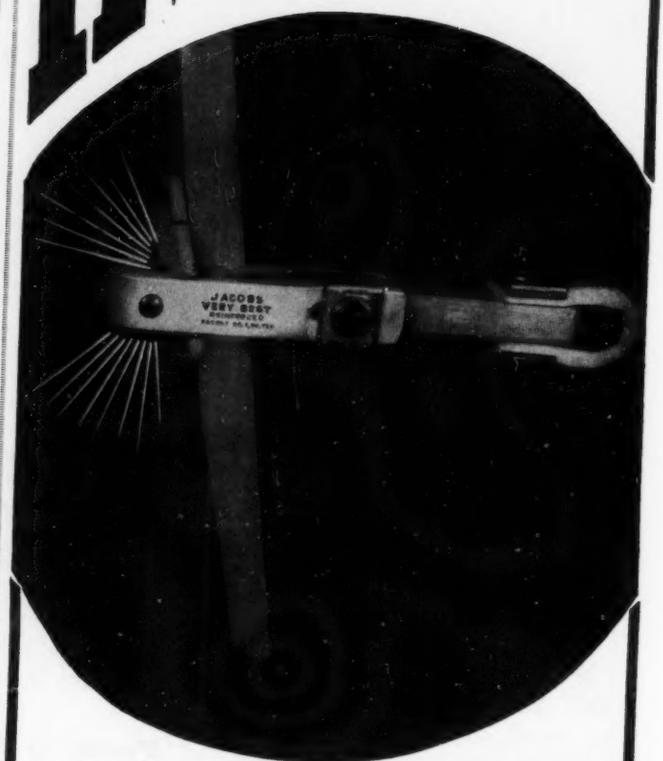
S. BLICKMAN, INC. 205 GREGORY AVE. WEEHAWKEN, N. J.

Blickman Built

STAINLESS STEEL TEXTILE EQUIPMENT

Dye Boxes, Linings, Cylinders, Dry Cans, Hoods, Tanks

IMPACT



Jacobs Reinforced "Verybest" Lug Straps . . . the only Reinforced Lug Straps . . . can withstand the TERRIFIC IMPACT of modern looms . . . especially developed for increasing loom speeds.

Additional Stocks at:

399 Lofton Rd., N. W.
Atlanta, Georgia
and
1602 Cedar Springs
Dallas, Texas

THE BULLARD CLARK COMPANY

JACOBS

SOUTHERN DIVISION
Charlotte, N. C.

NORTHERN DIVISION
Danielson, Conn.

Progress of Slasher Control Described at STA Meet

Progress is being made on an instrument to control moisture content at slashers without varying the speed of the slasher, according to Karl Seldon, Jr., of The Textile Shop, Spartanburg, S. C. Speaking before the Southern Textile Association in Greenville, S. C., on March 9, Mr. Seldon described the instrument as being sensitive and fast in its response to variations in moisture content of warp.

The speaker explained that though variable-speed drives would not be needed for this type of control because the moisture content would be regulated on a different principle, the variable-speed drives would still be used to regulate the speed of the slasher for varying warps run on the same slasher.

Stanley Berg of Fafnir Bearing Company spoke on conditions in the textile industry a generation ago and today, described special purpose anti-friction bearings, and told of the importance of correct mounting, proper lubrication, and reasonable care of bearings.

Officers elected for the South Carolina division of STA were: D. H. Roberts, Spartan Mills, Spartanburg, chairman; J. C. Godfrey, Calhoun Mills, Calhoun Falls, chairman of carding and spinning section.

Textile Wholesaler Census Expected to Reveal Influence of Synthetics

U. S. Census Bureau is sending about 4,500 enumerators to call on wholesalers of textiles and other dry goods to get information pertaining to operations last year, such as sales volume, payroll and employment, credit business, bad debt losses, and inventory. This is the first Census of Business taken since 1940. Compiled figures are expected to show the influence of new synthetics and integration in the converting trade. Under the law, answering of questionnaire is mandatory.

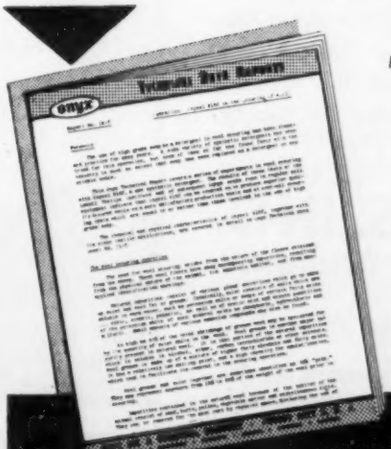
if you scour wool you should read this report!

ONYX TECHNICAL REPORT No. 19-T gives the complete data on a comparative test made with soap and with Onyxol 9162 on scouring wool, made recently at Lowell Textile Institute . . . and on an even more recent 53,000-lb. mill run, using Onyxol 9162.

You should read it—because the evidence is clear that *this new synthetic detergent is definitely superior to soap in production . . . in cost . . . and in quality of scoured wool.*

The physical and chemical characteristics of Onyxol 9162 are covered in Onyx Technical Data Sheet No. 21-T. Write for your copies of the Report and the Data Sheet.

ONYX OIL & CHEMICAL COMPANY
JERSEY CITY 2, N. J.
CHICAGO • PROVIDENCE • CHARLOTTE • ATLANTA
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que.
For Export: Onyx International, Jersey City 2, N. J.

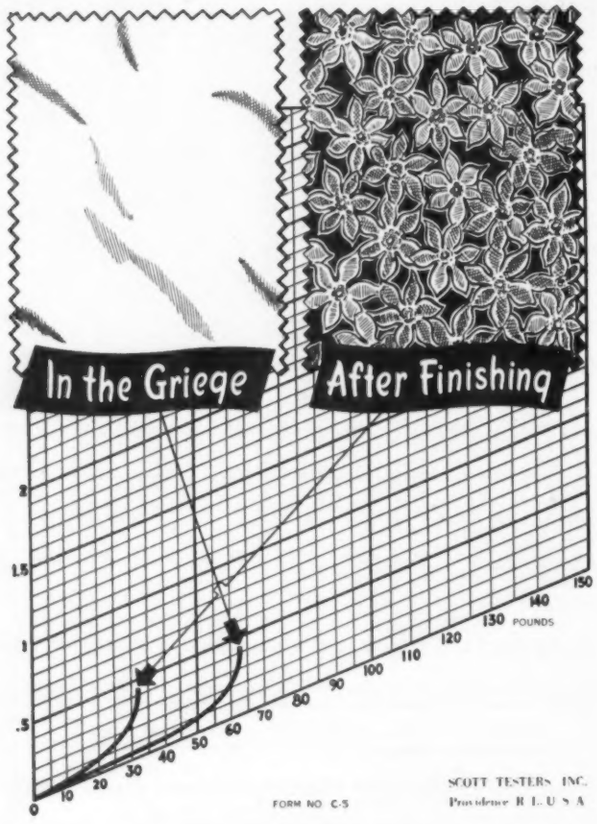


onyx

CHEMICALS FOR WOOL PROCESSING

TESTED IS TRUSTED

Mr. Finisher, here's how you can guard against TENDERING



The printed sample has lost about 35% of its tensile strength in finishing

The above "picturized" chart of an actual test on a Model J *Scott Tester, reveals that a high degree of tendering occurred during finishing. You can avoid this, Mr. Finisher. Let comparative testing "before and after" help you arrive at and maintain the finishing routine most compatible to each type of goods.

*Trademark.

SCOTT TESTERS, INC.

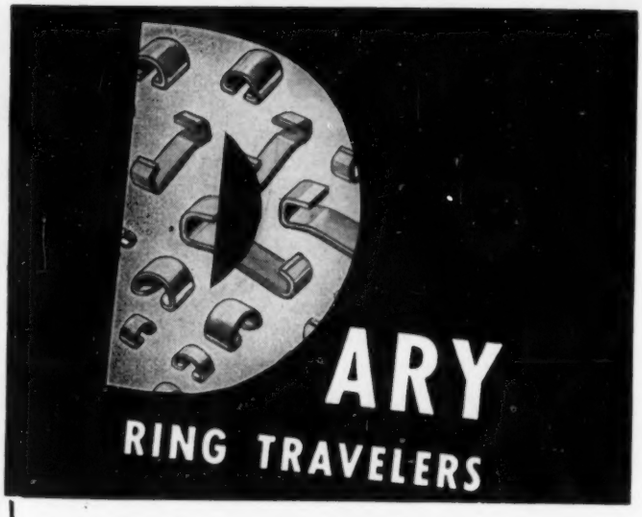
60 BLACKSTONE ST. PROVIDENCE, R. I.

Southern Representative

JOHN KLINCK

304 W. Forest Ave. North Augusta, S. Car.

Standard of the World



A *RINGING* SENSATION!

On spinning rings everywhere Dary Ring Travelers have a sensational reputation for long life at higher spindle speeds.

Fine workmanship, a tradition at Dary, plus the best materials *and* the famous Dary Process combine to make the travelers in the blue tin favorites year in, year-out!

Get to know your nearest Dary representative *now*, and you'll get to know real service!

PROCESSED
SYMBOL OF SUPERIORITY

THE DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

John E. Humphries . . . Box 843, Greenville, S. C.
John H. O'Neill . . . . . Box 720, Atlanta, Ga.
James H. Carver . P. O. Box 22, Rutherfordton, N. C.
Crawford Rhymer . P. O. Box 2261, Greenville, S. C.

SUPPLIERS' NEWS

WHAT THEY ARE DOING

Goodyear Tire & Rubber Co. Akron, Ohio, has announced the appointment of M. W. Sledge as assistant manager of the belting sales department, replacing the late W. P. Hallstein. Mr. Sledge formerly was a mechanical goods field representative in Knoxville, Tenn., with headquarters in Atlanta, Ga. There has been a complete reorganization of

Mr. Sledge

field supervision in the mechanical goods sales division made by the company. The new eastern sales division will be in charge of O. A. Schilling; H. E. Langdon will supervise the central sales division; R. B. Warren will take over the southern sales division, and R. G. Abbott will head the western sales division.

James L. Truslow, former overseas representative for the American Viscose Corp., has joined **Saco-Lowell Shops** as director of foreign sales with headquarters in Boston, Mass.

Crawford Rhymer, former superintendent of carding and spinning of the Laurens (S. C.) Mills, has been appointed to the sales organization staff of **Dary Ring Traveler Co.**, Taunton, Mass., as sales engineer and representative in the South Carolina territory. His headquarters will be in Greenville, S. C.

The **Foster Machine Co.** has plans for the erection of an addition to its plant in Westfield, Mass., providing a considerable increase in production area.

I. T. Meyer, formerly in charge of production, has been appointed plant manager of the Covington, Va. plant of **Industrial Rayon Corp.** He

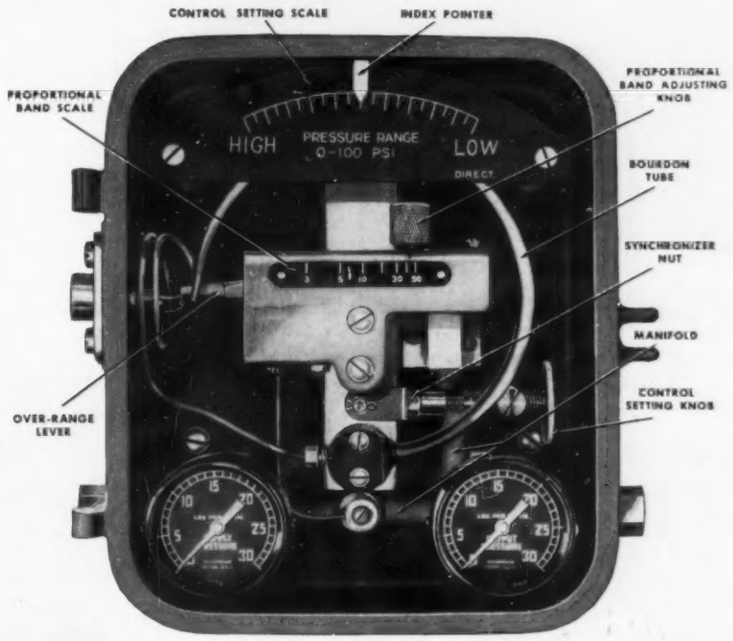
Here's the Pressure Controller You've Been Waiting for...

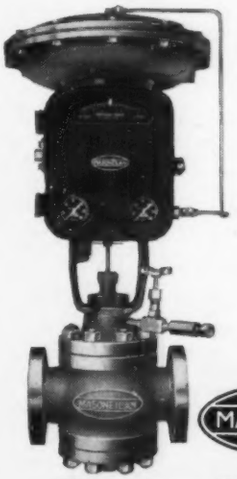
The Masoneilan No. 2700

- Liberal Use of Corrosion Resistant Materials
- Easy and Readily Accessible Adjustments

Look at these Features

1. Pneumatic proportionality accomplished with feed-back bellows and cantilever leaf spring.
2. Direct nozzle and flapper pilot with metering restriction.
3. Large powerful bourdon tube for greater response and control performance.
4. Wide selection of pressure ranges.
5. Cases for valve or wall mounting; also flush panel mounting.
6. Ease and accessibility of adjustments.
7. When steel construction is specified, controlled pressure connection, tubing to bourdon tube and entire bourdon tube assembly, are supplied with Type 316 Stainless Steel, in order to avoid corrosive effects.
8. Unit construction (proportional mechanism, nozzle block, etc.) and manifold.
9. Control action reversible with either bourdon or bellows.
10. Manifold construction prevents transmission of any possible case distortion to control mechanism.
11. Set point indication.





These controllers are designed for many industrial applications requiring accurate control where more expensive instruments are not warranted.

Applications include, among many others, pump governors, steam pressure reducing stations, gas well pressure reduction, etc., requiring small to intermediate proportional band.

The case is rugged and suitable for outdoor service; it is so designed that it may be mounted on the valve (on integral pad or by means of a U-clamp) or, *if the occasion arises, it may be removed from the valve and mounted on a wall.* A flush type case is also available for panel mounting.

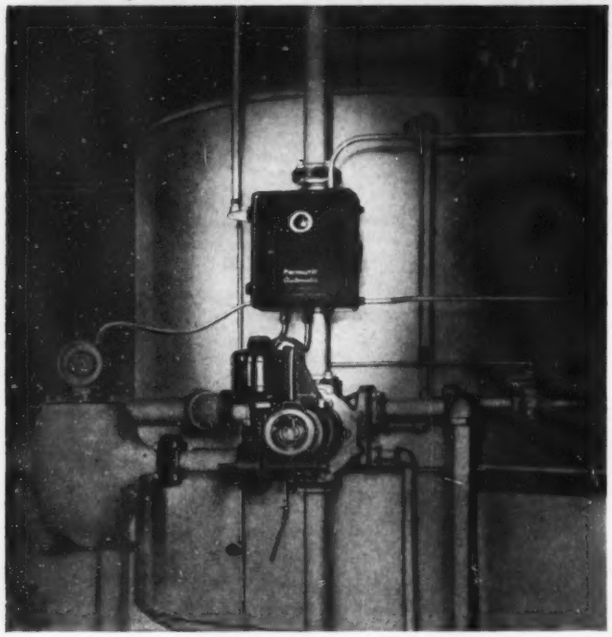
MASONEILAN

Mason-Neilan Regulator Company

1211 ADAMS STREET, BOSTON 24, MASS., U. S. A.

Sales Offices or Distributors in the Following Cities: New York • Syracuse • Chicago • St. Louis Philadelphia • Houston • Denver • Pittsburgh • Cleveland • Cincinnati • Tulsa • Atlanta Los Angeles • San Francisco • Salt Lake City • El Paso • Boise • Albuquerque Mason-Neilan Regulator Co., Ltd., Montreal and Toronto

World's First and Finest
AUTOMATIC WATER SOFTENER



GIVES ZERO WATER ALL THE TIME!

PERMUTIT INSURES QUALITY! Permutit quality-controlled process water safeguards fabric quality! Saves you money by guarding against spotty, off-color dye lots, or chemical reactions that ruin the finish of your fabrics.

PERMUTIT SAVES LABOR! Automatic regeneration, made possible by Permutit's Multiport Valve Control, saves you many costly hours of labor and attention! Modern Permutit units now offer you greater softening capacities than ever before!

Permutit's leadership, high quality, and technical know-how are reflected in this most modern and economical of water softeners! Your present softener can be modernized *easily*. Write for full information to The Permutit Company, Dept. TI-5, 330 West 42nd Street, New York 18, N. Y., or to The Permutit Company of Canada, Ltd., Montreal.

Permutit

Water Conditioning Headquarters for 35 Years

STYLE 20

LANE CANVAS BASKETS

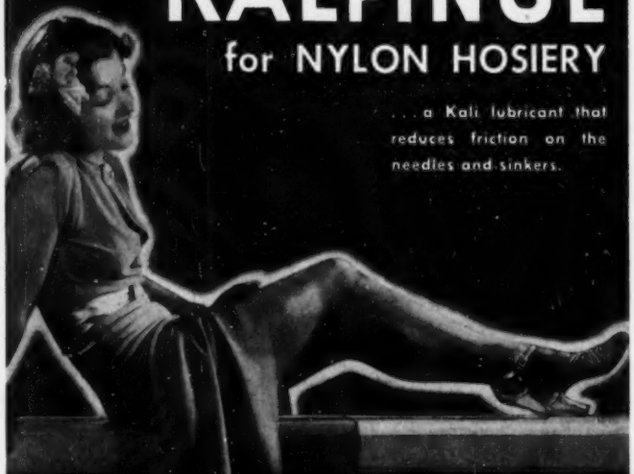
Hold 50 Year Record

KEEPING ABREAST OF CHANGING TEXTILE MILL REQUIREMENTS.

W. T. LANE & BROS., Inc., Mfrs.
Poughkeepsie, N. Y.

KALPINOL
for NYLON HOSIERY

. . . a Kali lubricant that reduces friction on the needles and sinkers.



Yarns wet with Kalpinol give a good stitch, then dry within two inches of the needles. Stitch remains set. Birdseyes or slipping of the stitch are avoided. Rolling is prevented, making seaming easier.

ONE OF A FULL LINE OF KALI TEXTILE CHEMICALS

KALI MANUFACTURING CO.

Manufacturing Chemists

427 MOYER STREET · PHILADELPHIA 25, PA.

succeeds Lester R. Carrier, retired after 23 years of service.

Dudley B. Setzler, former technical sales representative for Quaker Chemical Co., will take over as technical sales representative for the tex-

Mr. Setzler

tile chemical division of **Dexter Chemical Corp.**, New York, N. Y., covering Georgia, Alabama and Tennessee.

W. S. Huss has been sales manager of the southern division of **Acme Steel Co.**, with headquarters in Atlanta, Ga. He succeeds F. H. Webb, retired.

A. G. Fisher, Jr., former assistant superintendent of the finishing plant of Dan River Mills, Danville, Va.,

Mr. Fisher

has been appointed southeastern sales representative for **E. F. Drew & Co., Inc.** Mr. Fisher will make his headquarters in Greenville, S. C.

A. E. Carpenter, president of **E. F. Houghton & Co.**, Philadelphia, Pa., celebrated his 45th Anniversary with the company recently. In addition to his duties as president, Mr. Carpenter edits the company publication, "The Houghton Line."

Cloverleaf-Freeland Corp., bobbin manufacturers with plants in Hazleton and Honesdale, Pa., have moved all offices to Hazleton, where previously the production and executive offices only were located.

Moretex 3S* Size

Moretex 3S is a synthetic product which combines chemically with starches, gums, and gelatins to form a stable mix, which insures:

Uniform Sizing
Better Adhesion
Stronger Yarn
Smoother Yarn
Reduced Shedding

Easily Removed
Moretex 3S Sizings are easily removed by medium temperature washings.

*Trade Mark applied for

New Different Better

Write for full information

Moreland Chemical Company Incorporated
Spartanburg, S.C.

In New York...

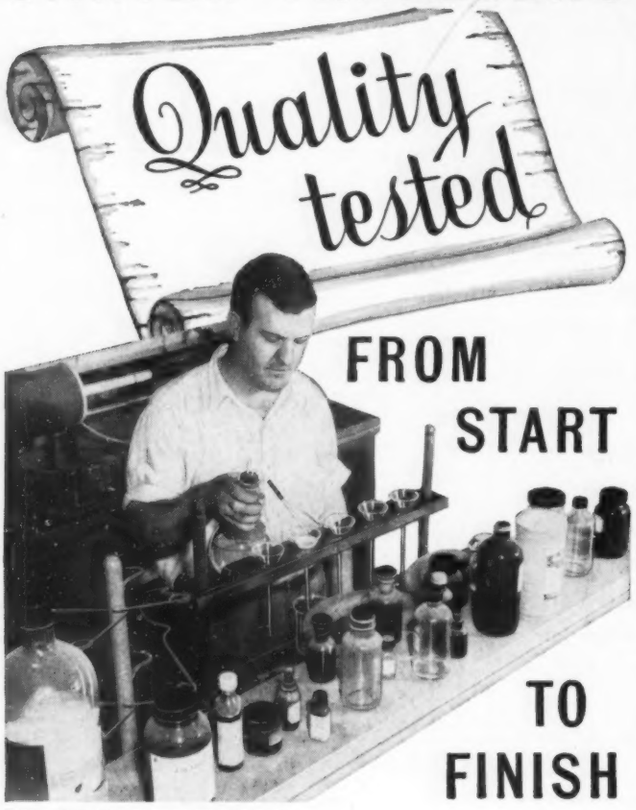
STORAGE and DISTRIBUTION

For the past 66 years we have offered every modern facility for protected storage. Our carefully trained office and warehouse personnel provide flexible and efficient distribution of your merchandise.

Kindly address communications to Dept. "T".

The Manhattan
STORAGE & WAREHOUSE CO.
7th AVENUE and 52nd STREET
NEW YORK 19, N. Y.

CARTER TRAVELERS



From raw material to fabricating to carburizing to heat treatment to finishing—every step of the way—the manufacture of CARTER TRAVELERS is controlled by chemical analysis, plus physical and microscopic tests.

This quality control is your guarantee of smooth running work, less ends down and minimum wear on expensive rings. It's profit insurance for the efficient, economical production demanded in today's market.

CARTER TRAVELER COMPANY
DIVISION OF
A. B. CARTER, INC.
GASTONIA N. C.

REPRESENTATIVES

C. E. HERRICK, 44 FRANKLIN STREET, PROVIDENCE, RHODE ISLAND
R. D. HUGHES SALES CO., 2201 CEDAR SPRINGS, DALLAS 1, TEXAS
HUGH WILLIAMS & CO., 47 COLBORNE ST., TORONTO 1, CANADA

All Rayon, Nylon, Other Synthetics and Silk Mills in the United States and Canada

The New 54th Annual—1949 Davison's Red Book

An accurate and complete revision of these trades by a competent organization of specialists in directory making for more than 84 years!

Your purchasing department quickly secures competitive prices on any machine or supplies needed in a mill or on anything made by a Rayon, Nylon, or Silk manufacturer.

Your sales department can easily increase your sales by intelligently using this information, either for salesmen's calls, mailing lists, or phone solicitation! **Information that costs us thousands of dollars to obtain is yours at a reasonable cost of only a few dollars. $7.50 for office edition. $5.50 for handy size.**

Complete Detailed Manufacturers Reports as Below—

140 Plain Broad Goods Mills
111 Commission Weavers
57 Broad Jacquard Fabric Mills
230 Braid and Trimming Mills
23 Elastic Yarns and Covered Rubber Threads
38 Garnetting Mills—30 Lacing Mills
10 Glass and Metallic Yarn Mills
386 Hosiery Mills (Seamless)
682 Hosiery Mills (Full Fashioned)
171 Knitted Cloth Mills
36 Necktie, Muffler and Scarf Mills
202 Ribbon,, Hat Band, Etc., Mills
26 Plastic Yarn and Fabric Mills
64 Label Mills—16 Line Mills
38 Rayon, Nylon Fibres and Yarns
474 Rayon or Silk and Cotton, Silk and Rayon and all Rayon Piece Goods
105 Elastic Goods and Webbing Mills
26 Knitted Glove Mills
53 Plush and Velvet Mills
35 Sewing Yarn Mills—77 Thrown Rayon, Nylon, Silk Mills
44 Spun Rayon and Silk Yarn Mills
59 Spun Rayon Fabric Mills
81 Knitted Sweater Mills
73 Tie Fabric Mills
10 Top Makers
100 Knitted Underwear Mills
88 Veiling Mills—60 Covered Wire Mills

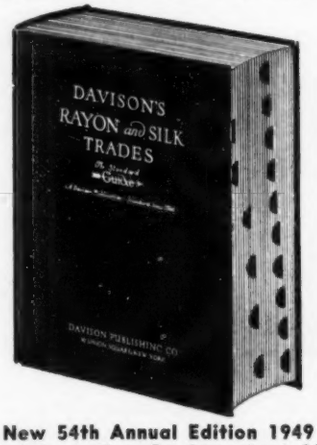
Publishing this important volume is still actively controlled by the Davison family. Early ideals as to accuracy and completeness are a natural inheritance. Fine quality of printing and binding continues as a matter of course. The same original and conscientious effort appears each year, as the book is issued to the trade.

The standard guide to rayon, nylon, other synthetics and silk trades with the latest revised information on all manufacturers, dyers, finishers, throwsters, distributors, users, statistics, technical data, machinery, supplies and dealers in many allied lines.

"An authority in the trade over fifty years"

Note the Sixteen Thumb Indexes

Fine Cloth and Gold Bindings 500 Pages



—Mills are all Carefully Reported

—Dealers are Listed With Addresses and Details

New 54th Annual Edition 1949
Latest Information On Important Lines—

93 Commission Throwsters
48 Commission Warpers and Winders
158 Winding, Spooling, Twisting, Etc.
577 Converters
588 Dyers, Finishers and Printers
100 Mills with Dye Houses
200 Thrown and Raw Silk Dealers
490 Waste Dealers and Mfrs.
134 Spun Silk Yarn Dealers and Mfrs.
291 Spun Rayon Yarn Dealers and Manufacturers
551 Rayon, Nylon Fibres and Yarns, Dealers
301 Fine Cotton Yarn Dealers
44 Factors
357 Manufacturers Agents
38 Textile Designers
75 Tinsel Yarn Dealers
371 New York Offices of Mills
80 Grey Goods Brokers
77 Yarn Brokers

Important Sections as follows . . .

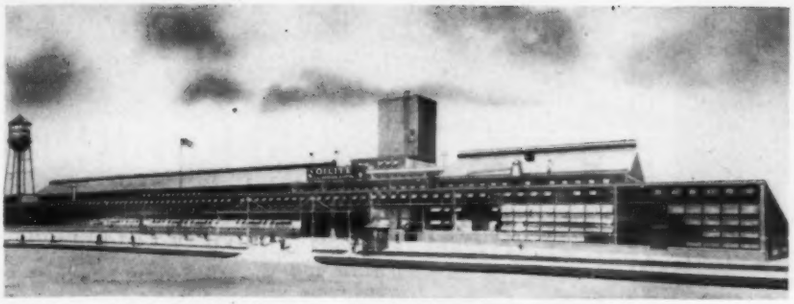
2,836 Manufacturers Classified by Product Made. Technical Information, Yarn Tables, Maps.

A Special section covers a Buyers' guide to Machinery, Yarns, Supplies, Chemicals, Dyes, Oils, Service, etc.

PRICES—De Luxe Office edition, $7.50. Quality plate paper, cloth covers with gold stamps. Size 6½ x 9 inches, 500 pages in size, weight 3 pounds. Pocket edition (thin paper), $5.50. (F.O.B., Ridgewood, N. J.) As the new edition is much in demand, order promptly!

Davison Publishing Company

Executive, Production and Sales Offices
Ridgewood, New Jersey, U. S. A.



The new Chrysler-Amplex plant in Detroit, Mich.

The Amplex division of **The Chrysler Corporation,** Detroit, Mich., has recently completed a major expansion program of manufacturing facilities. An improved service on Oilite heavy duty oil cushion bearings and finished machine parts will be provided.

William R. Muller has been appointed assistant to the president of **The Bullard Clark Co.,** Danielson, Conn.

Former assemblyman William R. Lieberman has been appointed sales manager of the newly-created Trim-Master division of **Ginsberg Machine Co., Inc.,** Brooklyn, N. Y. Si Margolis, previously with Liquor Publications, Inc., has been made advertising director of the new division of Ginsberg.

Numo Machine & Engineering Co., Charlotte, N. C., has announced the appointment of Matthews Equipment Co., Providence, R. I., as exclusive agents for New England and the South Atlantic states.

Norcross Corporation has moved its main offices from Watertown, Mass., to 247 Newtonville Ave., Newton, Mass. The new plant will provide increased manufacturing facilities and room for further expansion.

W. Chester Cobb, former southern sales manager, has been elected vice-president in charge of sales of manufactured products of **Arnold, Hoffman & Co., Inc.,** Providence, R. I. Leonard G. Tubbs, former northern sales manager, has become assistant general sales manager. Reid Tull has succeeded David L. Bockius, retired, as manager of the Philadelphia office. Mr. Tull formerly held the position of superintendent of the Clearwater Finishing Company, Old Fort Division, North Carolina.

Mr. Tull

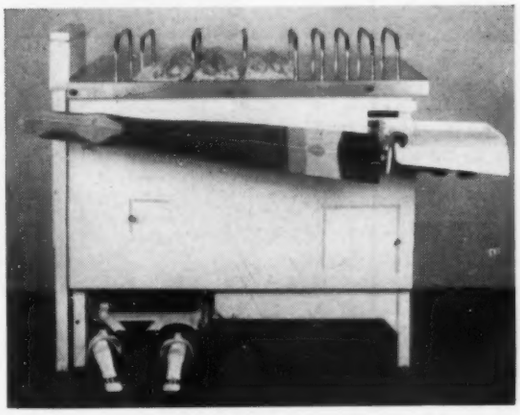
Mr. Cobb

HOSIERY INSPECTING VALUE

Produced out of Nowhere WITH

WHAT YOU GET

THREE DOLLARS



WHAT WE GET

Goes for further development.

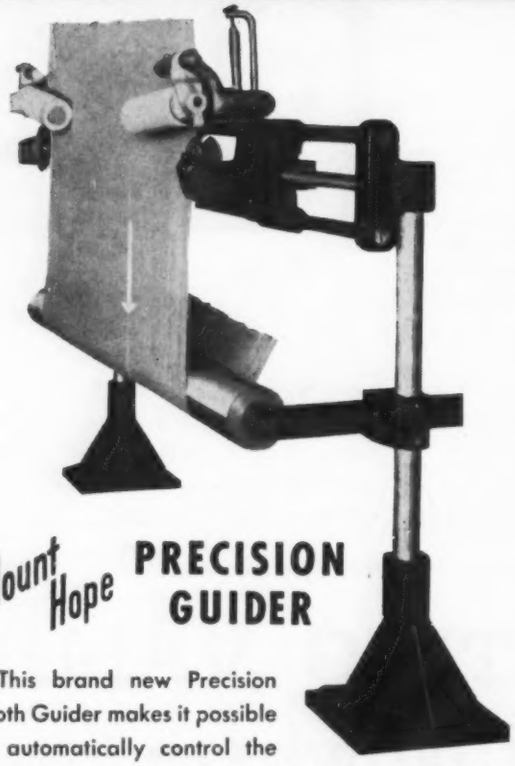
Our pay.

ONE DOLLAR

Contact — EDWARD R. AMMON, Inc.

READING, PA.

A NEW HIGH IN CLOTH GUIDING!



Mount Hope PRECISION GUIDER

This brand new Precision Cloth Guider makes it possible to automatically control the lateral movement of cloth, within closer limits, than ever before possible.

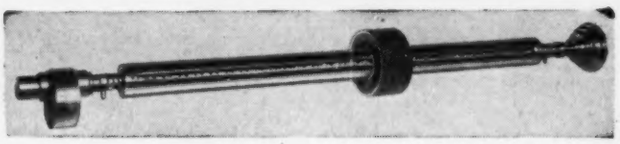
This precision control is made possible by an entirely new principle in cloth guiding, — a fluted selvage wheel which is contacted and turned by the selvage. The wheel actuates a rack which, in turn, actuates the tilting of nip rolls to guide the cloth toward or away from themselves as required. The result is practically instantaneous reaction and safest handling of goods, even the most delicate.

The Guider is purely mechanical; no coils to burn out or air valves to clog. It has wide adaptability, is rust proof, water proof, and has reversible Neoprene rolls.

Send for Bulletin No. SG-PG.

MOUNT HOPE MACHINERY CO.
42 Adams St., Taunton, Mass., U. S. A.

We invite you to visit our display of Cloth Handling Devices at booth 15, Textile Wet-Processing Equipment and Supplies Exposition to be held at the 71st Regiment Armory, New York City, June 6, 7, 8, 9, 10, 1949.



For Card Grinding Economy
For Real Efficiency
For Greater Productivity

Have your traverse grinders (any make) completely overhauled by ROY, originators of the screw traverse grinder principle.

No more waiting — immediate service now available at Charlotte and Worcester.

B. S. ROY & SON COMPANY

Established 1868

Worcester, Mass. • Charlotte, N. C.

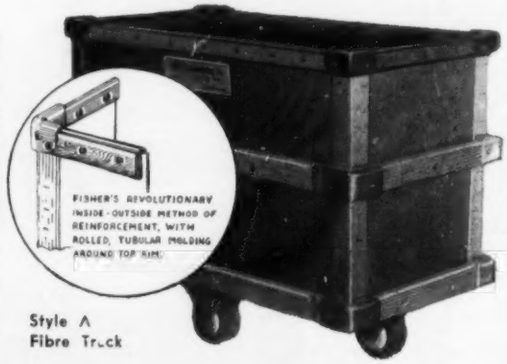
SALES ENGINEERS IN THE SOUTH:

Charles E. Hendrick — L. P. Bell — B. L. Quick — office and plant, 1623 North Tryon Street, Route 29, Charlotte, N. C. — Tel. 5-3845.

FISHER *FUNCTIONAL* TEXTILE TRUCKS

FOR EVERY MILL PURPOSE

Scientifically designed to avoid damage to machinery on contact, and ruggedly reinforced at points of greatest stress. Vulcanized Fibre with cured Oak Bands, and Steel Reinforced. Also made in Galvanized Steel, Aluminum, and Stainless Steel.



Style A
Fibre Truck

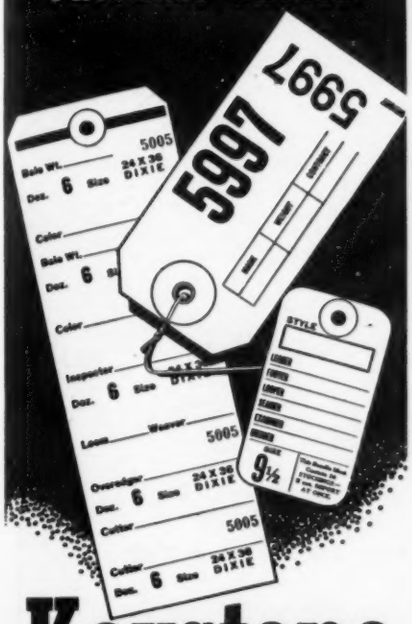
Write today for Free Illustrated Brochure showing complete range of styles.

Representatives

J. W. Davis 122 Dillingham St., Columbus, Ga.	Carolina Supply Co. 35 Court St., Greenville, S. C.	Shelton & Associates P. O. Box 496 Greensboro, N. C.

FISHER MANUFACTURING CO.
MATERIALS HANDLING EQUIPMENT, TEXTILE
BOX 244 -- HARTWELL, GEORGIA

accurately numbered
PROPERLY PACKED



Keystone
TAGS

- Shipping
- Identification
- Production (Piece work tickets)
- Cotton Bale Tags
- Special

Plain, printed, numbered, wired or strung.

Perhaps Keystone can save you money on tags. One thing's certain—Keystone *can* save you trouble, prevent loss of costly time. That's because Keystone Tags are accurately numbered and properly packed in correct sequence.

Keystone equipment is modern in design—it assures you getting a more clearly printed tag, promptly on promised delivery dates. Keytone's many textile mill users like this accuracy; this dependable service. You'll like it, too. Send us your inquiry or order.

KEYSTONE TAG CO.
Main Office and Factory
WEST CHESTER, PA.

IN THE SOUTH
Regional Office: 353 Luckie St., N. W., Atlanta, Ga.
Use the services of our experienced tag men in Atlanta, Macon, Savannah, Charlotte, Nashville, Chattanooga, Birmingham and Jacksonville. No obligation.

PERSONAL NOTES
ABOUT MEN YOU KNOW

Charles F. Schroeder, formerly associated with Goold & Tierney, Inc., advertising agency, has been appointed to the newly-created office of advertising promotion manager of Reeves Brothers, Inc., New York, N. Y.

R. K. Eaton, head of the department of yarn manufacturing of Clemson (S. C.) School of Textiles, has retired from active duty after 25 years of service.

Fieldcrest Mills, Spray, N. C., have announced the following personnel changes: **D. A. Purcell,** former superintendent of the Blanket and Sheeting Mills, has been made general superintendent of the Blanket, Sheeting, Bleachery and Finishing Mills; **C. A. Davis,** former assistant superintendent of the Blanket Mill, has been appointed superintendent of that mill; and **Ralph C. Going,** former assistant superintendent of the Sheeting Mill has become superintendent of the Sheeting Mill.

W. F. Stedman has assumed the duties of manager in the finishing department of Knit Sox, Inc., Hickory, N. C.

W. Robert Quackenbush, formerly in the finished goods department of the cotton and rayon fabrics division of William Whitman Co., Inc., New York, N. Y., has been appointed manager of the specialty department.

Cannon Mills Co. has announced the appointment of **Farror O. Griggs** as assistant purchasing agent, and the transfer of **D. Ray McEachern, Jr.,** to Plant No. 2 as assistant superintendent, at the mills in Concord, N. C.

P. Huber Hanes, Jr., formerly holding the office of vice-president, has been made vice-president in charge of manufacturing for P. H. Hanes Knitting Co., Winston-Salem, N. C.

The board of directors of the National Cotton Council have elected **Harold A. Young,** cotton producer with plantations in Little Rock, Ark., as president of the Council.

George R. Dugan has been appointed director of quality control of the Arms Textile Mfg. Co. in addition to his duties as general manager of

Manufactured and Serviced by
STODGHILL and COMPANY
ATLANTA GEORGIA

"The Size That Satisfies"
SUPERTAL

VANCIDES

The Fungicides and Bactericides that are SAFE to use

they're . . .

NON-TOXIC

NON-IRRITATING

STABLE • NON-VOLATILE

SEND FOR DESCRIPTIVE LITERATURE

R. T. VANDERBILT CO., INC.

230 Park Ave.
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DRONSFIELDS' PATENT

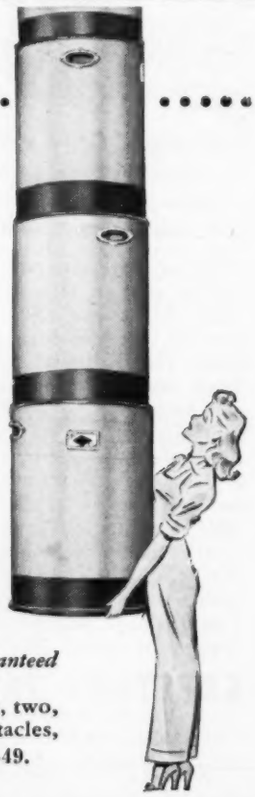
ATLAS BRAND

EMERY FILLET

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES AND CARD MAKERS

How to reduce handling weight . . .

SAVE HANDLING DOLLARS!



● One of the surest ways to cut material handling costs is to *move less weight.* Boxes, barrels, cans, trucks, and other receptacles made from Diamond Vulcanized Fibre weigh only 1/16 as much as steel—only ½ as much as aluminum! These tough durable receptacles are noncorrosive . . . oil and grease proof. Moreover, they're *guaranteed* not to crack or splinter.

Send in a trial order for one, two, or a dozen Diamond Fibre Receptacles, today. Write for Catalog R-49.

H 5-48

C-D DIAMOND FIBRE RECEPTACLES
CONTINENTAL-DIAMOND FIBRE CO., NEWARK, DEL.

The EMBLEM OF QUALITY METAL SHIELDS

For Spools and Bobbins

Anderson Shields are dependable protection against chipping, splitting, and breaking of spools, bobbins, and paper caps. Even the most minute details are carefully worked out to make Anderson the highest in precision, the smoothest in finish, the best in performance. The Anderson Emblem is your assurance of the finest shields you can buy.

Insist on Anderson when you order metal shields.

TEXTILE SHIELD CO., INC.

J. N. ANDERSON, Treasurer

LAWRENCE, MASS., U. S. A.

Stark-Amoskeag Woolen Mills, Inc., a subsidiary. Mr. Dugan will act as liaison between the manufacturing and sales organizations, and will work out of the New York and Manchester, N. H., offices.

Arthur C. Wheatcroft has been appointed manager of the Columbia Mills, Inc., in Wilkes-Barre, Pa. He succeeds **W. Rodman Derr,** now plant manager of Quaker Lace Co., Philadelphia, Pa.

Wamsutta Mills, New Bradford, Mass., has announced the following personnel changes: **John F. Greene,** former assistant to the divisional superintendent of both Wamsutta and Crown Mfg. Co., has become superintendent of Wamsutta; **Richard F. Cook** has been made assistant superintendent of Crown Mfg. Co.

R. W. Linscott has been made treasurer of the Lincoln Mills of Alabama, Huntsville, Ala., replacing **Charles D. McDuffie,** now a vice-president and treasurer of William L. Barrell Co., Inc., Boston, Mass.

Alan B. Sibley has announced his resignation as treasurer of Laurens (S. C.) Mill, but will continue as vice-president of the Judson Mill, Greenville, S. C. **N. G. Hardie** has resigned as general manager of the Laurens mill. **W. M. Ford** has replaced Mr. Sibley as treasurer at Laurens.

Frank Sloan Graves, sales manager of the Callaway Mills' Industrial Fabrics Division, has been elected vice-president of Callaway Mills, Inc., New York, N. Y.

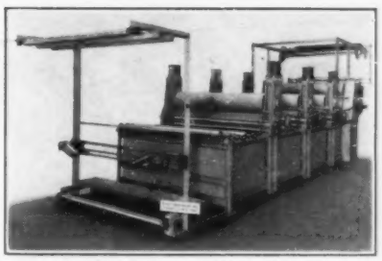
O. B. Stone has been promoted from assistant superintendent to superintendent of the No. 3 unit of Republic Cotton Mills, Great Falls, S. C. He succeeds **Joseph L. Wright** who has become general superintendent of the American Yarn and Processing Co., Mount Holly, N. C.

Samuel Powel has announced his resignation as manager of the finishing plant and sewing operations on sheets, pillowcases and table linens, at Utica Willowvale Bleaching Co., Chadwicks, N. Y.

Robert Anderson, a director of Cleveland (Ohio) Worsted Mills Co. and in charge of the company's Ravenna, Ohio, plant, has been elected to a new vice-president's post.

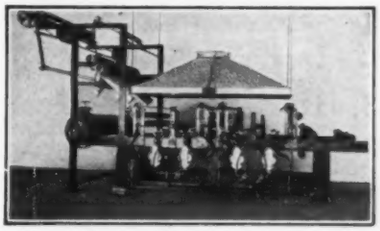
Edward C. Pfeffer, a vice-president of Cluett, Peabody & Co., Inc., has retired after 48 years with the firm,

(*Continued on page* 231)



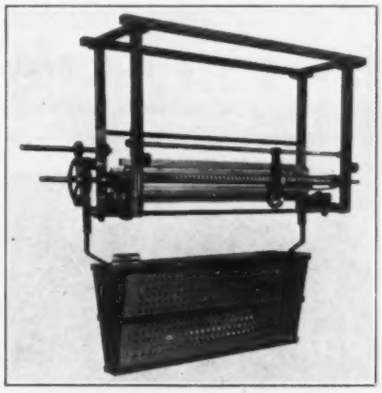
FOUR TANK CONTINUOUS WIDTH MACHINE

New ball bearing unit for scouring, crabbing, soaping or washing. For use on Cottons, Rayons, Rayon Blends, Gabardines, Worsteds and Pile Fabrics. Pressure applied to squeeze rolls by air cylinders. Drive by single motor or by individual motors to keep uniform tension on the fabric throughout the machine.



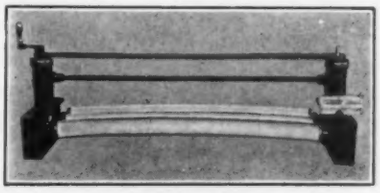
FOUR BURNER SINGEING MACHINE

For Worsteds and Tropicals; both sides singed in one run. Adjustable throughout. We also build Vertical Singers for Cottons.



BALL BEARING TRAVERSE PLAITER

Traveling Pot-eye folds cloth in rope form into trucks or bins. Parts made of rust resisting material.



Three-Bar Curved Rubber Expander with increased thickness of rubber giving longer life and better stretch, and fitted with trouble-proof bushings. Three Bar and Single Bar Expanders available from stock.

BIRCH BROTHERS, INC.

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HAROLD W. BIRCH CLIFFORD W. BIRCH
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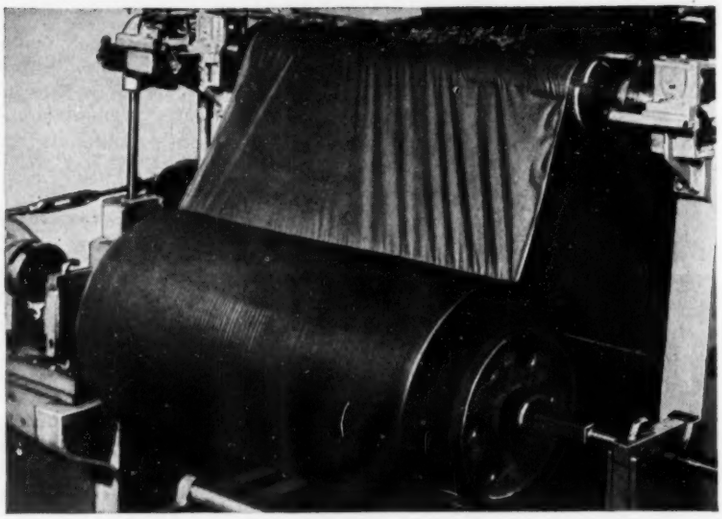
TACKY?

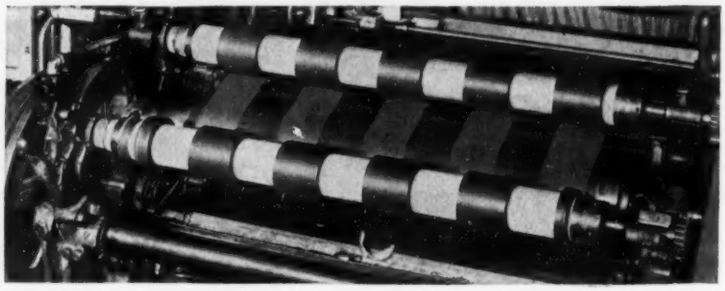
convert into perfect rolls
of narrow width on

Camachine 26-3A

Adhesive tapes and other tacky surfaced fabrics, papers, rubbers and plastics are converted into top quality rolls, firmly and evenly wound and measured to accurate width on Camachine 26-3A. Handles web up to 56" wide, producing rolls as narrow as ½" up to 17¾" diameter. Web speed range up to 400 fpm. The electric eye side guide control is not standard, but may be specified as extra equipment. Write for illustrated literature.



Below: using two rewind shafts for positive roll separation



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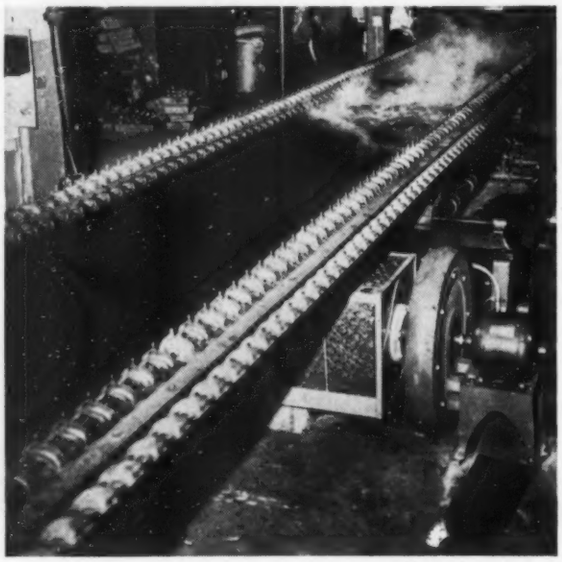
FOR FAST, TOP QUALITY ROLL PRODUCTION
... the world over

CAMERON MACHINE COMPANY, 61 POPLAR STREET, BROOKLYN 2, N. Y. AA-181A



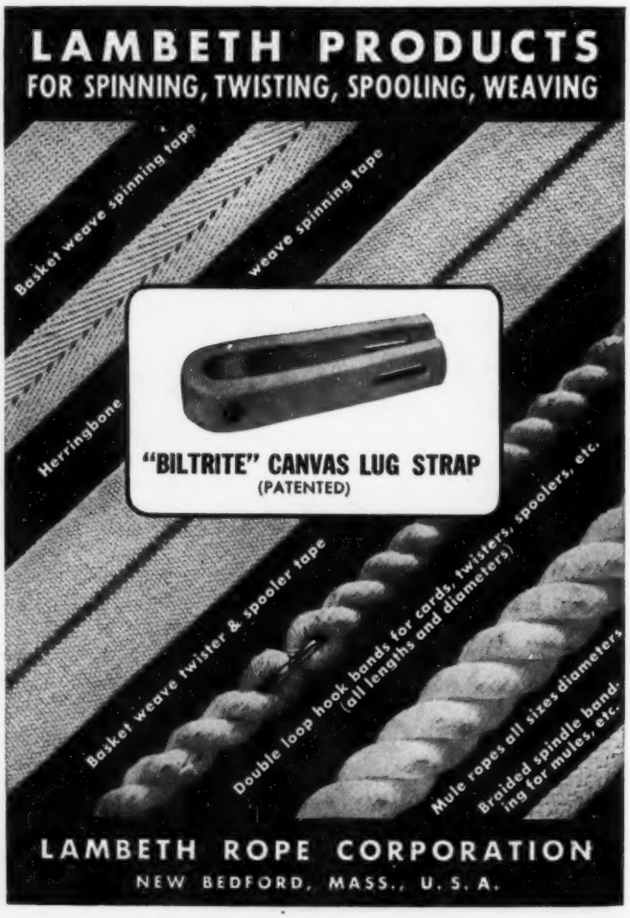
RED-RAY BURNERS

under open tenter frame increase drying speed on rayons.

Write for bulletins

RED-RAY MANUFACTURING CO., INC.
455 W. 45th Street — New York 19, N. Y.

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

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HELPFUL BOOKLETS FREE

Here is the "cream of the crop" of literature on textile subjects as prepared by TEXTILE INDUSTRIES advertisers to aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on the subject or New Equipment in which you are interested. Then fill in the numbers of those desired on the coupon on page 230 and mail it to TEXTILE INDUSTRIES. ("First Listings" shown below are not confined solely to TEXTILE INDUSTRIES advertisers).

This service is restricted to those engaged in operation and management of textile industries

First Listing of New Publications

5-1. Industrial Waste Disposal. Industry Data Bulletin 138 describes the application of the automatic pH recording and control ling instruments and recording flowmeters to industrial waste disposal operations. Photographs of the instruments and diagrams of several typical waste disposal applications are included. The Bristol Company, Waterbury 91, Conn.

5-2. Piping Materials. New 32-page circular No. 320, entitled "Corrosion-Resistant Piping Materials," contains descriptions and information on the complete Crane line of valves, fittings, fabricated piping and pipe coils to meet a wire range of corrosive conditions. Also contains eight pages of condensed recommendations, description of alloy materials, and corrosion questionnaire. Crane Co., 836 S. Michigan Avenue, Chicago 5, Ill.

5-3. Load Grab. A new catalog bringing up-to-date the information on the Load-Grab attachment for palletless materials handling with 2,000 and 4,000 pound capacity lift trucks. This eight page brochure is illustrated with both model views and operational photographs, and describes the hydraulically-controlled device which side squeezes bales, boxes, bundles, bags, barrels, drums etc. with just enough pressure to lift without pallets. Hyster Company, 2902-58 N. E. Clackamas St., Portland 8, Oregon.

5-4. Vulcanized Fibre Receptacles. This catalog, R-11, illustrates the wide range of standard Diamond Fibre receptacles which are available for general materials handling use. Each is designed to do its job efficiently and provide the lightweight, strong, smooth-surfaced equipment required for this type of work. Continental-Diamond Fibre Company, Newark 11, Delaware.

5-6. Testing Price List. A booklet listing the various tests made in the laboratories of the United States Testing Company, Inc., and showing the scope of its facilities. United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.

5-5. Dielectric Heating. The inside story of high frequency dielectric heating is told in a new 12-page bulletin which sets forth nine operating advantages for this process. These include speed, uniformity, versatility, push button control, high production, low-maintenance costs, high quality products, fewer rejects and minimum wasted heat. Bulletin 15B-6431A. Allis-Chalmers Mfg. Co., S. 70th St., Milwaukee, Wis.

5-9. Drew Antifoam-8. With the accellerated rate of operation in many power plants today foaming from either chemical or mechanical origin has become one of the prime problems in boiler operations. his bulletin will be of interest to those concerned with this operation. . F. Drew & Co., Inc., New York 10, N. Y.

5-10. Cellophane. To help customers better understand the various types of cellophane manufactured by this company, a brochure, "Characteristics and Uses" has been made available. A leaflet which compares type designations formerly used to identify certain classes of this company's cellophane with their present designations, is also available. Sylvania Division American Viscose Corporation, 350 Fifth Avenue, New York 1, N. Y.

5-11. Automatic Controls for Hosiery Dyeing. Textile manufacturers should find much interest and profit in this new literature's approach to a method of controlling both the temperature and time on dyeing machines. The bulletin presents a concise story of how complete automatic control provides more uniform shade matching, greater steam savings and less responsibility for the operator. Taylor Instrument Companies, Rochester 1, N. Y.

5-12. Barrett Lift-Trucks. This 28-page bulletin illustrates in two colors and describes in detail hand lift-trucks in capacities from 1,000 to 15,000 pounds. A chapter of particular interest and help to lift-truck users is entitled, "Selecting the Proper Model." Barrett-Cravens Company, 4609 S. Western Blvd., Chicago, Ill.

5-13. Plant Maintenance. "The Tornado Method" is the title of a new 34-page booklet which covers in detail practically every problem of plant and institution floor care and maintenance. It describes the equipment necessary, the steps to be followed with both old and new floors of every type and composition, from preparation through sealing and finishing to maintenance. Breuer Electric Mfg. Co., 5100 Ravenswood Avenue, Chicago 40, Ill.

5-14. Zeolite Water Softeners. "Permutit Zeolite Water Softeners and Ion Exchangers" No. 2386, describes the troubles caused by hard water, outlines the properties of ion exchanges, explains and illustrates the most up-to-date ion exchange equipment. A description of the new manually or automatically controlled multiport valve is also given. The Permutit Company, 330 West 42nd Street, New York 18, N. Y.

5-15. Oiler Installation Photo Book. New, profusely illustrated book shows actual job installations of visible, automatic oilers. It provides many helpful tips on correct oiler application. Types of oilers illustrated include constant level, wick, thermal and gravity feed. Wide range of industrial applications covered. Trico Fuse Mfg. Co., 2948 N. 5th Street, Milwaukee 12, Wis.

-16. Electric Heaters. A new program designed to show how electric heat, properly applied, can help industry to increase production, provide better equipment designs, and improve product quality has been announced. Available bulletin on this subject include: "Heating Pipelines With Electric Heaters", GET-1739; "Heating Process Air With Electric Heaters", GET-1741; and "Heating Liquids With Electric Heaters", GET-1742. General Electric Company, Apparatus Department, Schenectady 5, N. Y.

5-17. Flexible Metal Hose. This 68-page book, G-50, contains full descriptive and complete specifications for standard types of flexible metal hose, in a variety of metals. In addition, it contains complete sections on expansion joints for piping systems; stainless steel and brass bellows, and various conduits and special assemblies of these components. Chicago Metal Hose Corporation, Maywood, Ill.

GENERAL ECONOMIC, MANAGEMENT . . .

4. HOW FACTORING CAN INCREASE PROFITS—Describes how factoring works out in keeping clients' capital liquid and attitude of factor toward checking credits, including typical balance sheet.—COMMERCIAL FACTORS CORP., New York City.

5. FACTORING AND FINANCING — Illustrated booklet on how factoring works, cost and credit information.—TEXTILE BANKING COMPANY, New York, N. Y.

6. ROYCE REPORTER—Published quarterly containing information of general interest to the textile field.—ROYCE CHEMICAL CO., Carlton Hill, N. J.

7. RAYON TELLS ITS STORY TO THE PUBLIC—Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public.—AMERICAN VISCOSE CORPORATION, New York 1, N. Y.

9. TESTING IN MODERN INDUSTRY — This booklet includes many useful tables, conversion factors, equivalent yarn sizes and other information helpful in textile mills. Also describes specialized testing service. Available free to mill men on request.—UNITED STATES TESTING CO., Hoboken, New Jersey.

10. "LABOR AND MANAGEMENT BENEFIT BY INDUSTRIAL ENGINEERING PRINCIPLES"—8-page illustrated folder outlining principles of industrial engineering as they apply to textiles.—AMERICAN ASSOCIATED CONSULTANTS, INC., New York, N. .

11. FLETCHER JUNIOR "SUPER-SELF-BALANCING" EXTRACTOR—Illustrated folder describing this new extractor with the highly efficient self-balancing arrangement which uses steel springs instead of rubber buffers.—FLETCHER WORKS, INC., Philadelphia, Pa.

PLANT AND PLANT MAINTENANCE . . .

101. PLANT CONSTRUCTION—Management will be interested in this informative literature, "How Two Similar Plants Can Vary in Construction Costs 50% or More."—McPHERSON COMPANY, Greenville, S. C.

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

105. FLUORESCENT LIGHTING FIXTURES—Specification sheets describing in detail industrial lighting fixtures of particular interest to the textile industry. Full information given on construction, light curve, methods of hanging, etc.—SMITHCRAFT LIGHTING DIVISION, Chelsea 50, Mass.

107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

115. ATOMIZER HUMIDIFIER — Recent issue of "Parks' Parables" on Turbomatic self-cleaning humidifiers, and automatic regulation. — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

129. BAHNSON CENTRIFUGAL HUMIDIFIER—Bulletin 327 describes this completely self-contained industrial humidifier which requires only water feed and drain and electrical connection to install.—THE BAHNSON COMPANY, Winston-Salem, N. C.

135. SAFETY COLOR CODE—How six standard colors can be used to reduce hazards, cut down accidents.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Division, C44, Wilmington, Dela.

138. MAGNESIUM IN THE TEXTILE INDUSTRY—Illustrated booklet on properties of magnesium for spinning, twisting, winding, knitting machines, looms, beams, spools, bobbins.—ALUMINUM CO. OF AMERICA, Pittsburgh, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS—Bulletin describes new atomizers with construction loosening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES—Illustrated Booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS, SONS, INC., Cedar Grove, N. J.

152. AIR CONDITIONING FOR THE TEXTILE INDUSTRY—40-page illustrated book covering air conditioning from humidity control to complete refrigerated conditioning with installations, charts, covering ABC's of cooling textile mills.—CARRIER CORP., Syracuse, N. Y.

159. BAHNSON HUMIDUCT SYSTEM — Bulletin 330 describes this unit system of air conditioning for humidifying, cooling, heating, ventilating, filtering, and dehumidifying in any desired combination. —THE BAHNSON CO., Winston-Salem, N. C.

160. INSTALLING MACHINERY WITHOUT LAG SCREWS OR BOLTS—Booklet describing use of UNISORB pads for anchoring all types of machinery. —THE FELTERS COMPANY, Boston, Mass.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs, as well as preserving textile mill floors.—G. H. TENNANT COMPANY, Minneapolis 11, Minn.

163. LAWLOR FLOOR MACHINES — Illustrated pamphlet containing specifications and describing All-Purpose Floor Machines.—THE SELIG COMPANY, Atlanta, Ga.

166. OAKITE PLANT MAINTENANCE DIGEST—A 16-page manual describing materials and methods for handling 54 recurring maintenance cleaning and related tasks in factories and mills.—OAKITE PRODUCTS, INC., New York 6, N. Y.

170. WHY IT PAYS TO ANCHOR YOUR TEXTILE MACHINES WITH UNISORB — Illustrated booklet discussing control of vibration and noise and how UNISORB reduces maintenance costs.—THE FELTERS CO., Boston, Mass.

172. VENTILATING FANS — Bulletin 3339 gives facts on Buffalo Ventilating Fans. — BUFFALO FORGE CO., Buffalo, N. Y.

177. DUCTLESS AIR CONDITIONING — Recent bulletin describing same.—AMERICAN MOISTENING COMPANY, Providence, R. I.

179. TOLEDO SCALES — A condensed catalogue which illustrates and describes all of the principal types of weight control equipment used in the textile industry. — TOLEDO SCALE COMPANY, Toledo, Ohio.

180. TANK MAINTENANCE — Illustrated folder describing R. E. McLean's methods of cleaning and painting water tanks and stand pipes. — R. E. McLEAN, Gastonia, N. C.

181. AIR FILTRATION AND DUST CONTROL—24 pages on atmospheric control, including engineering data.—AMERICAN AIR FILTER CO., INC., 275 Central Avenue, Louisville 8, Ky.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

201. ROLLER CHAINS, ETC.—Catalogs RC-49 and V-135-46 supply practical information, advantages and complete specifications helpful in selecting the proper power transmission chain drive to meet the requirements of textile machinery.—WHITNEY CHAIN & MFG. CO., Hartford, Conn.

203. BELTING & RUBBER GOODS—A condensed catalog on bolting, V-belts, horse and other textile rubber goods is available.—RAYBESTOS-MANHATTAN, INC., Passaic, N. J.

211. JOHNSON BRONZE CATALOGUE NO. 460—Shows over 850 sizes of cast bronze bushings, 350 sizes of UNIVERSAL Bronze Bars and over 250 Electric Motor Bearings. — JOHNSON BRONZE COMPANY, New Castle, Penna.

212. GATES TEXTILE ACCESSORIES — Showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions.—THE GATES RUBBER COMPANY, Denver, Colo.

216. LEATHER BOOKLET NO. 202 — Attractive book illustrating and describing BONDARON Special Tanner Leather as used in various forms such as Check Straps, Solid Round Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

218. BALL BEARINGS ON TEXTILE MACHINERY—Catalog 9 gives advantages of ball bearings, describes types, illustrates each type of textile machinery.—THE FAFNIR BEARING CO., New Britain, Connecticut.

231. V-BELT ENGINEERING DATA BOOK—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. — MANHATTAN RUBBER MANUFACTURING DIV. of Raybestos-Manhattan, Inc., Passaic, N. J.

235. JOHNSON LEDALOYL BEARING BRONZE—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings.—JOHNSON BRONZE COMPANY, New Castle, Pennsylvania.

236. LEATHER BELTING CALCULATOR—Handy and attractive calculator for determining belt, speeds, horsepower per inch of belt widths, etc., will be sent free on request.—J. E. RHOADS & SONS, Philadelphia, Pa.

244. TEXACO SPINDURA OILS—Folder on lubrication for all types of spindles, based on actual tests.—TEXAS CO., New York City.

251. OILITE BEARINGS AND PARTS—Catalog B44 describes and illustrates Oilite bearings and parts for all industries. — AMPLEX DIVISION, Chrysler Corporation, Detroit 31, Mich.

263. NEEDLE ROLLER BEARING—Catalog Engineering and Application Data Edition 32 contains full data on selection of proper Needle Roller Bearings and outlines uses of such in various commodities including textile uses, types, installations, lubrication, etc. — TORRINGTON COMPANY, Torrington, Conn.

264. NEW DEPARTURE SHOP MANUAL—Illustrated catalog showing ball bearing mounting and maintenance practice. Covers storage, cleaning, lubrication, types of bearings.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

265. INTERCHANGEABLE BALL BEARING FOR REPLACEMENT—Charts showing numbers used by manufacturers to identify bearing characteristics, also information on specifications.—NEW DEPARTURE DIV., GENERAL MOTORS CORP., Bristol, Conn.

269. LUBRICATION AND MAINTENANCE OF BALL AND ROLLER BEARINGS—Illustrated bulletin describing efficiencies and economies of NON-FLUID OIL for all types ball and roller bearings.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

270. MANHATTAN FLEXLASTICS — Illustrated booklet describing how flexlastics are used in the Manhattan and Condor line of belting and mechanical rubber goods.—MANHATTAN RUBBER DIVISION, Passaic, N. J.

271. CARDING, SPINNING AND WEAVING LUBRICATION—Informative bulletin describing advantages of NON-FLUID OIL over ordinary lubricants for the lubrication of carding, spinning and weaving machinery.—NEW YORK AND NEW JERSEY LUBRICANT CO., New York, N. Y.

272. HOUGHTON LUBRICATION CHART — Attractive chart listing lubrication recommendations for all mill departments and various textile machines.—E. F. HOUGHTON AND CO., Philadelphia, Penna.

275. HYATT ROLLER BEARINGS — A 16-page bulletin giving details of the application of roller bearings to all types of textile machinery.—HYATT BEARINGS DIV., General Motors Corp., Harrison, New Jersey.

276. SPEED CONTROL—Bulletin 20B6051G describes Texrope variable speed drives. — ALLIS-CHALMERS MFG. CO., Milwaukee 2, Wis.

277. PRECISION COMPOUND AND CHAIN DRIVE—Folder explaining more profitable operation of roving frames.—PRECISION GEAR AND MACHINE CO., Charlotte, N. C.

279. OILITE BULLETIN—Discussion of uses of oil-cushioned, self-lubricating bearings in product design and maintenance is contained in this illustrated bulletin. A wide range of machine parts is offered.—AMPLEX DIV., CHRYSLER CORP., Detroit 31, Mich.

280. BALL BEARING PILLOW BLOCKS AND FLANGE CARTRIDGES—Folder LAK contains informative text on ball bearing pillow blocks and flange cartridges incorporating the Fafnir Wide Inner Ring Bearings suitable for new as well as replacement applications in textile machinery.—THE FAFNIR BEARING CO., New Britain, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

307. THERMOMETER AND PRESSURE GAUGES—Catalog 6705-R and 6706 give data on both circular and rectangular case pressure type thermometers for inaicating, recording and controlling processing operations in textile industry.—BROWN INSTRUMENT COMPANY, Philadelphia, Pennsylvania.

311. PIPING POINTERS—Industrial maintenance book covering installation and handling of piping, valves, fittings. Well illustrated, practical tips. — CRANE CO., Chicago, Ill.

314. MOISTURE CONTENT CONTROL — Bulletin F-1705-1 giving details of features and benefits of moisture equipment control for slashers and textile application. — BARBER-COLMAN CO., Rockford, Ill.

315. CONTROL INSTRUMENTS FOR TEXTILE PROCESSES—32-page illustrated booklet describing controls for such processes as slashing, dyeing, bleaching, kier boiling, drying, air-conditioning, etc. —BROWN INSTRUMENT CO., Philadelphia, Penna.

316. HYDRAULIC POWER UNITS—Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc.—B. F. PERKINS & SON, INC., Holyoke, Mass.

319. GUIDE TO CORRECT INSTRUMENT SELECTION—This completely revised edition gives a comprehensive bird's-eye view of the companies' entire instrument line. Bulletin 98170. — TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

320. OAKITE POWER PLANT DIGEST—A 20-page manual describing materials and methods for handling 71 cleaning, degreasing, descaling, derusting, paintstripping and related operations encountered in power plants.—OAKITE PRODUCTS, INC., New York 6, N. Y.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED-RAY MFG. CO., New York, N. Y.

CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS, STEEL, BLENDING FEEDERS—Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking. — ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS—24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings.—THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. WINDING MACHINES—PRINCIPLES AND PRACTICES—This series has been running for some time in TEXTILE INDUSTRIES and has now been made available in booklet form for those in the industry who desire copies.—UNIVERSAL WINDING COMPANY, Providence, R. I.

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405. AUTOMATIC SPINNING CONTROL — New folder available describing the Numo automatic control specifically designed to eliminate uneven packages and tails.—NUMO MACHINE & ENGINEERING CO., Charlotte, N. C.

407. CARD GRINDER INFORMATION—Folder on care of card grinders, part replacement, etc.—B. S. ROY & SONS CO., Worcester, Mass., and Greenville, South Carolina.

409. ROTO CONER—Bulletin describing Universal rotary traverse winder, known as the Roto Coner, producing open wound cones or knitting and warping; parallel tubes for package dyeing, twisting, and sale yarn.—UNIVERSAL WINDING CO., Providence, Rhode Island.

413. SONOCO PRODUCTS—A 60-page illustrated booklet giving description, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc.—SONOCO PRODUCTS CO., Hartsville, S. C.

416. THE BRIEF SAGA OF THE RING TRAVELER—An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of the ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. — NATIONAL RING TRAVELER CO., Pawtucket, R. I.

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423. TEXTILE SHEET METAL PRODUCTS—Folder on cylinders, card screens, licker-in screens, repair work.—JENKINS METAL SHOPS, INC., Gastonia, North Carolina.

427. WINDING AND CREELING WARP YARNS—Universal's Bulletin No. 442 contains an interesting treatment of this subject.—UNIVERSAL WINDING COMPANY, Providence, R. I.

428. PNEUMATIC ROLL PICKER—Attractive bulletin descriptive of the "Amoskeag" roll picker that removes fly and lint from the top rolls and other drafting elements in spinning and roving frames.—M-B PRODUCTS, Detroit, Mich.

430. "SLIXONICE" BEARINGS—Folder is available on this new, frictionless bearing "that never needs lubrication."—DIXON LUBRICATING SADDLE COMPANY, Bristol, R. I.

432. PRECISION TEXTILE WINDING—Bulletin on Kidde Tension and Density Control for winding rubber cores. — WALTER KIDDE & CO., INC., Belleville, N. J.

433. AUTOMATIC TRAVELING CLEANERS—Recent issue of "Parks' Parables" on automatic cleaners for spinning, warping, twisting.—PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

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436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER—Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and rewinding.—SCOTT TESTERS, INC., Providence, R. I.

437. SPINDLE TAPE LACING EQUIPMENT—Circular No. 54 illustrating and describing the Clipper method of joining spindle tapes.—CLIPPER BELT LACER CO., Grand Rapids 2, Mich.

439. JUMBO DOUBLER TWISTER—Doubling and twisting in one economical operation, combining from two to twelve ends of yarn, the U. S. Acme Jumbo Doaler Twister is described and illustrated in this bulletin.—U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

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443. COMPARATIVE YARN TABLE—Chart giving woolen number (cut and run system), also cotton worsted and metric system; also, Comparative Rayon Denier Yarn Table.—VICTOR RING TRAVELER CO., Providence, R. I.

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445. ROLLER BEARING SPINDLES—Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described.—THE MARQUETTE METAL PRODUCTS CO., Cleveland, Ohio.

447. CONE WINDER—Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply.—FOSTER MACHINE COMPANY, Westfield, Mass.

452. DEVELOPMENT IN WARP SIZING—Technical bulletin, describing the successful new development of applying a warp lubricant separately from and subsequent to sizing with starch and in the same operation. This patented process involves the use of a Warp Lubricator Unit and SLIX, a new one-piece liquid sizing material.—SOUTHERN SIZING CO., Atlanta, Ga.

WEAVING, SLASHING . . .

502. TEXTILE COUNTERS—Catalog T-48 describing pick counters for looms, hank counters for spinning, yardage counters for cloth loom, etc.—VEEDER-ROOT, INC., Hartford, Conn.

510. THE ROMANCE OF PRAIRIE GOLD—Attractive illustrated book which tells the story of corn and the uses of corn products in industry.—CORN PRODUCTS SALES CO., New York, N. Y.

511. WARP SIZING OF SPUN RAYON—Reprint of article appearing in recent textile publication. Interesting and informative.—THE HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

512. BRIGHT SPOT IN THE PRODUCTION PICTURE—Folder on more loom speed through Hunt loom spreaders.—HUNT MACHINE WORKS, INC., Greenville, S. C.

513. SEYCO PENETRANTS FOR YARN CONDITIONING—Folder describing the scientifically formulated Seyco sizing. — SEYDEL-WOOLLEY & CO., Atlanta, Ga.

515. TEXTILE COUNTERS—Catalog No. 50 illustrating and describing complete line of Productimeter Loom Pick Counters; Hank Counters; Yardage, Electric and Predetermined Counters; Tachometers, etc. — DURANT MANUFACTURING CO., Milwaukee 1, Wisconsin.

516. WEAVE ROOM ACCESSORIES—Weave room accessories catalog and literature on new plastic, bronze bearing sheave, which solves a troublesome weave room problem.—EMMONS LOOM HARNESS COMPANY, Laurence, Mass.

517. LOADING SYSTEM—Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices.—THE FOXBORO COMPANY, Foxboro, Mass.

518. NIAGARA TWIST-SETTER—Folder describing the revolutionary Niagara Twist-Setter which has no moving parts. The yarn is sprayed from all sides to afford maximum economy.—SEYDEL-WOOLLEY & CO., Atlanta, Ga.

519. WOODEN BEAM HEADS, WARPER BEAMS, AND WARPING MACHINERY FOR ALL FIBERS—62-page illustrated booklet descriptive of and giving specifications for the Allen line of beam heads, warper beams, warping machinery, stop motions and cloth rolls.—ALLEN COMPANY, New Bedford, Mass.

520. PNEUMATIC LOADING SYSTEM—Bulletin 418 contains illustration photo, features, specifications and prices for pneumatic loading system for Charles B. Johnson Machine Works slasher squeeze rolls.—THE FOXBORO COMPANY, Foxboro, Mass.

521. STEEL WARP BEAMS—20 page catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broadloom and narrow fabrics. Also Textile Machinery Specialties.—MILTON MACHINE WORKS, INC., Milton, Pa.

523. OVERHEAD MOUNTS FOR BIGGER LOOM BEAMS—Folder illustrating and describing how bigger beams can be adapted under all mill conditions. Includes handy Multiplier Table showing increased yarn capacity possible with bigger beams.—WEST POINT FOUNDRY & MACHINE COMPANY, West Point, Ga.

524. JOHNSON WARP SIZER—13 page fully illustrated booklet, describing the 7 cylinder sizer with stretch indicator and finger-tip control of stretch. A point-by-point analysis.—CHARLES B. JOHNSON MACHINE WORKS, Paterson, N. J.

525. GATES LOOM ACCESSORIES — Catalogs MRG-418, MRG-421, MRG-422 describe the advantages of lug straps, harness straps and drop box pickers made from a remarkable new material called Tex-Hide. Catalog MRG-419 describes the advantages of a new "Tractive-Rib" take-up roll covering.—GATES RUBBER CO., Denver 17, Colorado.

526. LOOM EQUIPMENT—Folders on flat heddles, frames, and reeds for all types of looms and weaves.—WALKER MFG. COMPANY, Philadelphia 35, Pa.

528. PARTS, CATALOGS FOR WPF&M SLASHERS, SIZE KETTLES AND PUMPS—This 42-page illustrated catalog of parts contains exploded views and part numbers for quick identification.—WEST POINT FOUNDRY & MACHINE COMPANY, West Point, Ga.

DYEING, FINISHING, CLOTH ROOM . . .

602. ALUMINUM IN THE CHEMICAL INDUSTRY—Published by Aluminum Company of America. Seventy-eight pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. — ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

605. CONTINUOUS AUTOMATIC EXTRACTING MACHINE — Folder describing the most efficient method of extracting excess liquid from fibrous materials.—C. G. SARGENTS SONS CORP., Graniteville, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY—Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes Preboarding and Automatic Boarding Machines for hosiery.—PROCTOR & SCHWARTZ, INC., Philadelphia, Pa.

611. BRUSHING AND SHEARING MACHINES—Illustrated literature on the new Hermas Brushing Machine for use light sheeting to heavy ducks; also on Hermas AV Shears.—HERMAS MACHINE CO., Hawthorne, N. J.

612. WET GOODS TRUCK—Illustrated bulletin which describes fully this stainless steel wet goods truck. Complete specifications and information given. —S. BLICKMAN, INC., Weehawken, N. J.

613. RADIANT HEAT IN TEXTILE INDUSTRY—New illustrated book on uses of radiant heat, data on fuel consumption, evaporation, etc.—RED-RAY MFG. CO., New York, N. Y.

614. STRIPS IN ROLLS—Form No. CF-642 illustrated folder showing over 25 slitters and roll winders for textile use.—CAMERON MACHINE CO., Brooklyn, New York.

616. ENGINEERING PROPERTIES OF MONEL—Technical Bulletin T-5, giving detailed information on strength and ductility working properties, resistance to various types of corrosion and other data on Monel Metal. — INTERNATIONAL NICKEL CO., INC., New York, N. Y.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING—Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation.—TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

621. INFRA-RED RADIANT HEAT GENERATORS—Illustrated bulletins on infra-red technology and applications throughout Textile pre-drying, drying, polymerizing, printing and other heat-processing operations. — CARBOMATIC CORPORATION, New York, N. Y.

622. FILT-R-STIL—Attractive illustrated booklet describing the FILT-R-STIL method of chemically purifying water.—AMERICAN CYANAMID & CHEMICAL CORP., New York 20, N. Y.

625. BALL BEARING ROLLER TYPE SCRAY—Circular No. 964 describing this scray which is for use in handling heavy and large size rolls of cloth. This is used either in finishing plants or in the cloth room of cotton mills.—BIRCH BROS., INC., Somerville, Mass.

626. GUIDER AND GUIDING EQUIPMENT—This booklet entitled "Mount Hope Precision Guider and Guiding Equipment" describes this latest development in guiding equipment. The new guider, it is claimed, makes possible automatically controlling the lateral movement of cloth within closer limits than ever before possible.—MOUNT HOPE MACHINERY CO., Taunton, Mass.

627. SINGLE APRON STOCK DRYER—Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions.—C. G. SARGENTS SONS CORP., Graniteville, Mass.

630. VAT DYEING OF WOOL—Write for Calco Technical Bulletin No. 797 outlining fundamental dyeing procedures, and explaining new advances in the technology of wool dyeing and finishing.—CALCO CHEMICAL DIVISION, AMERICAN CYANAMID CO., Bound Brook, N. J.

632. LUG STRAP WASHERS—Series 1-C illustrated bulletin detailing right and wrong application and use of washers.—E. H. JACOBS NORTHERN DIVISION, Danielson, Conn.

633. PRINTING WITH ARIDYE PIGMENT COLORS—Bulletin F-1 describes preparation and application of pigmented water-in-oil emulsions for printing cotton, rayon, and other fabrics.—INTERCHEMICAL CORPORATION, TEXTILE COLORS DIVISION, Fair Lawn, N. J.

634. APPLICATION OF INTERCHEM ACETATE DYES—Bulletin IAD-1 describes procedures for dyeing and printing acetate rayon and nylon fabrics with new line of highly dispersed acetate dyes.—INTERCHEMICAL CORPORATION, TEXTILE COLORS DIVISION, Fair Lawn, N. J.

DYESTUFFS, CHEMICALS, SOAPS . . .

705. THEORETICAL AND APPLIED SILK-SOAKING—Attractive 28-page booklet outlining methods of silk-soaking and outlining investigation on the soaking, back-winding and degumming of silk.—HART PRODUCTS CORP., New York City.

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713. LIOVATINE ED—Vat dyeing assistant increasing penetration and level dyeings with maximum yield of color.—SANDOZ CHEMICAL WORKS New York City.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletins on Aquarol, water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and rayon, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

717. FINISH KB — Finishing compound designed as binder in combination with filling and stiffening compounds. Avoids dusting, insures draping qualities. — SANDOZ CHEMICAL WORKS, New York City.

720. SYNTHETIC FIBERS — Attractive folder briefly describing the company's products used in the manufacture of synthetic fibers. — HERCULES POWDER COMPANY, Wilmington, Del.

725. TEXTILE PROCESSING—Bulletin No. 5, interesting and informative, concerns itself with textile processing with energetic synthetic detergent.—ARMOUR & COMPANY, 1355 West 31st St., Chicago, Ill.

738. LEVELENE—Booklet describing use of Levelene for leveling vat and direct colors. Also for stripping down vat colors.—AMERICAN ANILINE PRODUCTS, INC., New York, N. Y.

740. MONSANTO CHEMICALS—212 page illustrated buyers' guide for users of chemicals including useful tables, chemicals, information.—MONSANTO CHEMICAL COMPANY, St. Louis, Mo.

749. LUPOMIN G—Pamphlet outlines the application of the quaternary ammonium compound recommended for treating natural and synthetic fibres to give soft hand, lubrication, odorless finish, brighter shades, etc.—JACQUES WOLF & CO., Passaic, N. J.

752. CAUSTIC SODA BOOK—Elaborate 72-page text containing useful graphs, charts, diagrams and descriptive photographs designed for use of the technical men, buyers, executives, operating officials and engineers in textile mills.—COLUMBIA CHEMICAL DIVISION, PITTSBURGH PLATE GLASS CO., Pittsburgh 13, Pa.

755. LUPOMIN—Leaflet outlines the advantages of the cation active softener which is suitable for use on cotton, linen, silk, wool, synthetic fibres and mixed fabrics. A small percentage of lupomin gives a supple, smooth hand.—JACQUES WOLF & CO., Passaic, New Jersey.

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765. HOSIERY FINISHES AND FORMULAE—Attractive new booklet describes the Amalgamated line of hosiery finishes and giving numerous finishing formulae.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

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767. STYMER—Booklet describing the totally new sizing and finishing agent for rayons, cottons and worsteds.—MONSANTO CHEMICAL CO., St. Louis, Mo.

768. TEXTILE CHEMICALS—Buying guide and reference book giving facts about Amalgamated Products, the fabrics on which they give best results, their proper application, and their chemical composition.—AMALGAMATED CHEMICAL CORP., Philadelphia 34, Pa.

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771. "STARCH STABILIZER" — Folder on Vanesta, a product used for textile sizing and printing, discussing stabilization and the results obtained. —R. T. VANDERBILT CO., New York 17, N. Y.

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774. ROYCE TEXTILE CHEMICALS—This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing.—ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

KNITTING . . .

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803. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste.—H. W. BUTTERWORTH & SONS CO., Philadelphia, Pa.

809. TEXACO IN THE KNITTING INDUSTRY—Folder on knitting mill lubrication.—THE TEXAS CO., New York, N. Y.

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813. THE NEW REINER HIGH SPEED TRICOT MACHINE—168" or 84" knitting widths. A richly illustrated catalog describing its many novel features of construction and performance. — ROBERT REINER, INC., Weehawken, N. J.

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818. MILTON LIGHT METAL BEAMS FOR EVERY APPLICATION — Catalog 45-A describing Light Metal Tricot Beams made in Standard and Special sizes plus Special Purpose Light Metal Textile Equipment.—MILTON MACHINE WORKS, INC., Milton, Pa.

820. VARIABLE STRIPES AND PLAIDS — Booklet describing Supreme Models SA and SA-ROF Stripers for knitting plaids, checks, "floatless" designs and variable stripes.—SUPREME KNITTING MACHINE CO., INC., Brooklyn 6, N. Y.

822. HIGH SPEED JERSEY CIRCULAR MACHINE—Complete illustrated brochure showing features and highlights of this 100 yard per hour producer. Also available — New Cylinder Chart. — SUPREME KNITTING MACHINE CO., INC., 105 Johnson Ave., New York.

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1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach, Calif.

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1007. OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

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1028. TRAV-LIFT CRANES—Bulletin H12-1 describing P & H overhead traveling crane service.—HARNISCHFEGER CORP., Milwaukee 14, Wis.

1030. C-D HOLLOW WARE—This 32-page catalog, 11W44, profusely illustrated in color, shows Continental-Diamond's line of boxes, trucks, cans, barrels, baskets and trays. Complete description and specification is given on each item.—CONTINENTAL-DIAMOND FIBRE CO., Newark 38, Del.

MISCELLANEOUS . . .

1101. AUTOMATIC BOBBIN REFINISHER—A descriptive bulletin illustrating and describing method of refinishing throwing bobbins on a production schedule.—J. M. NASH COMPANY, 2360 N. 30th St., Milwaukee, Wis.

1102. BALING PRESSES—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

1103. UNBRAKO SCREWS — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1104. INTERPRETATION OF ANALYSIS — In compiling this brief collection of terms which most frequently appear in analysis of surface active chemicals, an attempt has been made to explain as clearly as possible the meaning of these terms to those who have had little or no chemical training. —NOPCO CHEMICAL CO., Harrison, N. J.

1105. MILL NOTES—This is a mimeographed six-page pamphlet published every month containing information of new developments in process manufacturing and testing of interest to woolen and cotton mills. Mailed free to interested readers on request.—UNITED STATES TESTING CO., Hoboken, N. J.

1107. AUTOMATIC QUILL POLISHER—Bulletin describes production machine for refinishing loom bobbins. Tells how quills can be kept in perfect condition at minimum labor cost.—J. M. NASH CO., 2360 N. 30th Street, Milwaukee 10, Wis.

1108. FABRICATION OF U. S. STAINLESS STEELS—136 page book covering use of stainless steel in textile equipment from cutting to cleaning. Includes corrosion-resistance table for chemicals.—CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

1111. BRUSHES—A 36-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—GASTONIA BRUSH COMPANY, Gastonia, N. C.

1113. FLUORESCENT INSPECTION UNIT—Data available which describes this new fixture, which employs fluorescent lamps behind a diffusing panel of flashed opal glass, with details of construction, advantages and complete specifications. — SALEM MANUFACTURING CO., Salem, Mass.

TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Ga.

Please send me, without obligation, free booklets or further information on New Equipment items described in the May 1949 issue of TEXTILE INDUSTRIES.

(Fill in here numbers you select from items in this issue) .....

.....

.....

Name .....

Firm Name..... Position.....

City and State .....

Street .....

Personal Notes

(*Continued from page 225*)

but will continue as a director.

John Hoye, head of the Hoye Textile Corp., New York, N. Y., and **Julius B. Goldberg,** research director of J. P. Stevens and Co., Inc., New York, N. Y., have been elected Fellows of the Textile Institute, Manchester, England.

Miss Jean Lonergan, former home furnishings coordinator at both Gimbel Brothers and Strawbridge and Clothier in Philadelphia, Pa., has joined the home decorations department of James Lees and Sons Co., Bridgeport, Pa.

Harrison C. Givvens, Jr., has succeeded **Fred T. Small** as plant manager of the Cumberland, Md., plant of Celanese Corp. of America. Mr. Small has assumed executive duties as vice-president and director in the New York office.

C. E. Dugan has been appointed secretary of the Plymouth Mfg. Co., Inc., McColl, S. C. He succeeds **F. F. Adams** who is continuing as secretary of the Marlboro Cotton Mills.

M. Earl Heard, vice-president in charge of research for West Point Mfg. Co., Shawmut, Ala., has been elected chairman of the newly-formed committee on research by the American Cotton Manufacturers Association.

J. A. Sullivan, former overseer of weaving at Mexia (Texas) Cotton Mills, is now with the San Antonio Cotton Mills, Southton, Tex., in a similar capacity.

M. Birdsong, former overseer, has become night superintendent of the New Braunfels (Tex.) Textile Mills.

John Boyd has been promoted to assistant superintendent at the Myers and Ridge plants of Textiles, Inc., Gastonia, N. C.

Joseph Elkins has succeeded **Clyde F. Wagner** as superintendent of Humbolt Bay Woolen Mills, Eureka, Calif. Mr. Wagner resigned to form his own company.

Obituaries

Ferdinand Thun, 83, noted industrialist and co-founder of Wyomissing Industries, passed away March 25 at his home. The philanthropist and leader of American hosiery industry succumbed a little more than a year after the death of Henry Janssen, with whom he established the business 57 years ago.

E. J. Abbott, 64, president of Abbott Machine Company, passed away April 4 as the result of virus pneumonia.

G. Edward Buxton, 68, passed away while at the Jane Brown Hospital, Providence, R. I., on March 16. Mr. Buxton at one time was president of Androscoggin Mills, Bates Mfg. Co., Edward Mfg. Co., Hill Mfg. Co., and York Mfg. Co., in Maine. He held directorships in U. S. Bobbin & Shuttle Co. and Fruit of the Loom, Inc. He was president of the National Association of Cotton Manufacturers in 1927, and vice-president of the Cotton-Textile Institute, Inc., in 1933.

Max C. Miller, an expert on knitting machine technique, specializing in the full-fashioned field, and also

The FIDELITY Double End Skein Reeler. Also Available in Single End.

Reduce Down Time...Boost Profits
THE NEW FIDELITY SKEIN REELER

Automatic operation of the new Fidelity Skein Reeler permits the use of one operator on as many as four machines. This means an increase in productive man-hours and reduction of idle waiting time. 3 of the 4 machines continue reeling while one is being doffed. Results—reduced manufacturing cost . . . efficiency . . . a plant streamlined to meet today's competition.

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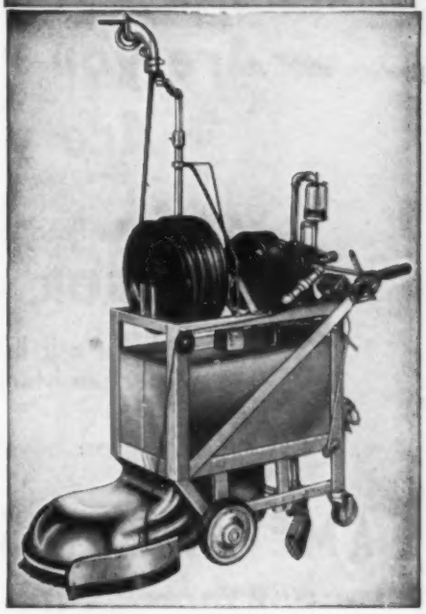

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DOES BOTH JOBS

Only one operator is required to run this remarkable two-in-one machine. Clean water is fed from one tank upon the soaped floor, the 19" diameter revolving brush scrubs it quickly and thoroughly. Then a rubber squeegee mops up the dirty water which is vacuum-pumped into a second tank.

JUST THE THING FOR LARGE AREAS

The Lawlor 20-D is only 22" wide and can be used in congested places around machines, counters and desks. Available for either AC or DC current.

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All steel with perforated rolls. Easy foot-lever operation. Made for one or two pails.

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Heavy galvanized steel with welded seams. Two compartments, each with shut-off. Foot pressure wringers. 30 or 60-gallon capacity.

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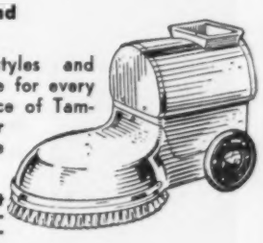
12 different styles and sizes, a right size for every need. Your choice of Tampico, Palmetto or Steel Wire brushes.



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Give EXTREMELY SATISFACTORY SERVICE

Waterous pumps are positive rotary type. Because of the crescent shape rotors there is no metal-to-metal contact within their pumping chambers. It's a simple, efficient design and construction that means long life, dependable performance and satisfactory service.

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Illustrated is the tight and loose pulley model. Capacities from 5 to 150 G.P.M. Waterous pumps are now successfully pumping size to slashers in many leading mills throughout the country.

LOW COST OPERATION

In Waterous pumps are rigid bearings, spring loaded seals and inverted rotor hub. All bearings and timing gears run in oil to assure continuous lubrication of the pump without contamination of the size and the pump lubrication.

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Shaft leakage and shaft friction are reduced to a minimum by the pumps being equipped with spring loaded seals. Waterous pumps have positive volume control, self-priming and constant delivery, without agitation within the pumps.

NO METAL-TO-METAL CONTACT

SPRING LOADED SEALS

NO SHAFT LEAKAGE

NO CONTAMINATION OF SIZE

Waterous Pumps ARE AVAILABLE In Stainless Steel

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WATEROUS COMPANY
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Waterous Dependable
SINCE 1886

acting as advisor to textile machinery manufacturers, passed away last February in Philadelphia, Pa.

Merton M. Rudisill, president and treasurer of Maiden (N. C.) Spinning Mills, Inc., died March 17 at the age of 64 in a New York Hospital.

Albert R. Pierce, 79, former agent and superintendent of Pierce Mfg. Co., New Bedford, Mass., passed away recently.

Clarence R. Howe, 63, at one time president of the U. S. Bobbin & Shuttle Co., Lowell, Mass., and more recently a manufacturer's agent, died March 9 at the St. John's Hospital following a brief illness.

Robert B. Lewis, 74, former sales manager of the thread department at Standard-Coosa-Thatcher Co., died in Haddon Heights, N. J., recently after a long illness.

Horace B. Burks, 44, general manager of the Wehadkee Yarn Mills, Talladega, Ala., passed away unexpectedly last February 20.

W. H. Jennings, Sr., chairman of Barrow Manufacturing Co., Winder, Ga., passed away last March.

Misconceptions Regarding Technological Development in the U. S.

In a broad program designed to correct misconceptions about technological development in this country, the Machinery & Allied Products Institute has cited the following erroneous conceptions that need to be dealt with in the United States:

1. That corporation profits are too high, as charged vigorously in certain quarters;

2. That too much of industry's income and the nation's savings are invested in plant and equipment;

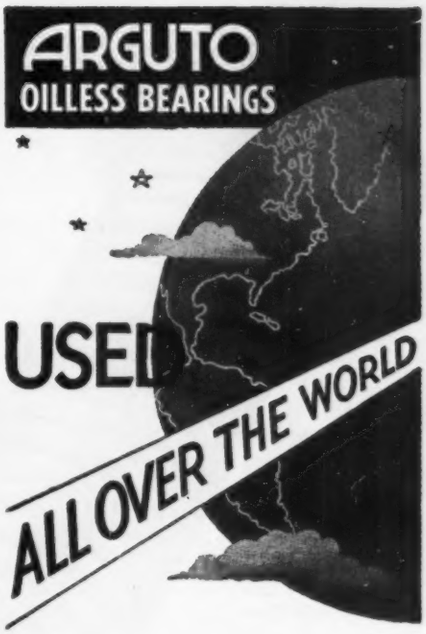
3. That a larger proportion of the income of manufacturing corporations should be distributed in dividends;

4. That all loans for capital equipment should be curtailed;

5. That technology destroys more jobs than it creates;

6. That nothing can be done to modulate the sharp declines of business cycles.

ARGUTO OILLESS BEARINGS



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KNURLED SELF-LOCKING SQUARE HEAD SET SCREWS

Costly shut-downs may be reduced to a minimum when you use set screws that "stay put". The patented internal or external *knurling* on the Cup Point of this "UNBRAKO Square Head Set Screw makes it an excellent Self-Locker . . . *positively will not shake loose!* The "UNBRAKO" is a "brute" for strength and a real fastener if ever there was one—for all applications where cup point set screws can be used.

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Knurling of Socket Screws originated with "Unbrako" in 1934.

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MODERN—AUTOMATIC

The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

for Drying Wool, Cotton, Rayon, Other Synthetic Fibres, Rags

The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

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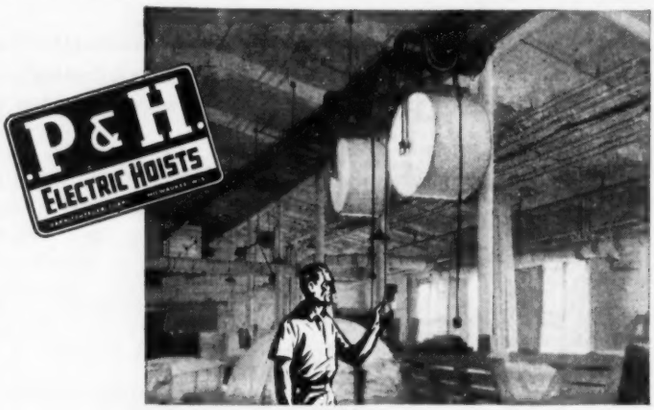

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WHAT THE TEXTILE MILLS ARE DOING

Linen Thread Co. has plans for a three-story addition to Mill No. 3 in Blue Mountain, Ala., at a cost reported to be over $200,000, with equipment.

Bibb Mfg. Co. has authorized the installation of an air conditioning system in its Payne Mill, Macon, Ga., sewing twine and plied yarns. The project is to cost about $300,000. The company also plans a new office building adjoining Mill No. 2, estimated to cost over $250,000.

Canton Waste Co., recently organized to manufacture textile waste, has acquired a one-story building in Baltimore, Md., and will improve and equip for a plant. Louis Cherner and Sidney Wolk are to head the concern.

Talbot Wool Combing Co., Norton, Mass., has approved plans for a one-story addition to be equipped for processing nylon. The cost is reported as over $50,000, with equipment.

E. I. du pont de Nemours & Co., Inc., Rayon Division, Wilmington, Del., has curtailed operations about 20 per cent at the viscose process rayon yarn mill in Buffalo, N. Y. The company also has made smaller reductions in output at the continuous filament rayon mills in Old Hickory, Tenn., and Richmond, Va.

Ragan Spinning Co., fine combed yarns, thread, etc., has let general contract for a one-story addition to the mill in Gastonia, N. C.

American Yarn & Processing Co., Mount Holly, N. C., has plans to install additional equipment at several of its mills, to cost approximately $535,000. This will include a proposed addition to the worsted yarn mill at Lenoir, N. C., operated under the name of Spun Fibres, Inc.

Private ownership of the houses in the mill village of **Mansfield Mills,** Winston-Salem, N. C., has been transferred to the employees.

Reidsville (N. C.) Throwing Co., a subsidiary of Burlington Mills Corp., has been placed on a curtailed two-day weekly schedule, and is expected to suspend production for an indefinite period early in April.

Fieldcrest Mills are reported as planning an expansion and improvement program at the rayon mill in Spray, N. C., and cotton mills at Draper and Leaksville, N. C. Work will include certain mill extensions and installation of additional machinery. The cost is reported as close to $1,000,000.

James Lees & Sons Co., Bridgeport, Pa., woolen and worsted yarns, has plans for certain mill improvements during the present year. Broader carpet looms will be installed at the rug and carpet mill in Glasgow, Va.

Bloomsburg (Pa.) Mills, Inc., rayon piece goods, is establishing a branch mill at Dallas, Pa., for the production of twisted crepe yarns. It will be operated under the name of Fernbrook Park Mill Division of the company.

Rovner Worsted Mills, Inc., Philadelphia, Pa., has been organized to manufacture woolen and worsted goods. The new company is headed by Robert Rovner, Philadelphia.

Berkshire Fine Spinning Associates, Inc., Valley Falls division, has resumed production on a five-day week, two-shift per day schedule at the mill in Albion, R. I.

United States Rubber Co. has plans to build a $250,000 laboratory for textile research and development at Winnsboro, S. C., to adjoin the company's mill there. The new laboratory will permit the consolidation and expansion of the research and development work previously carried on in Winnsboro, in Hogansville, Ga. and elsewhere.

Gaffney (S.C.) Mfg. Co., Inc., print cloths and broadcloths, has approved plans for modernization in the mill, including the installation of motor-driven direct drives for machinery and a fluorescent lighting system throughout the mill. The cost is estimated at about $250,000.

Limestone Mills, Inc., Gaffney, S. C., print cloths, has proceeded with the expansion and modernization pro-

an actual case from our files

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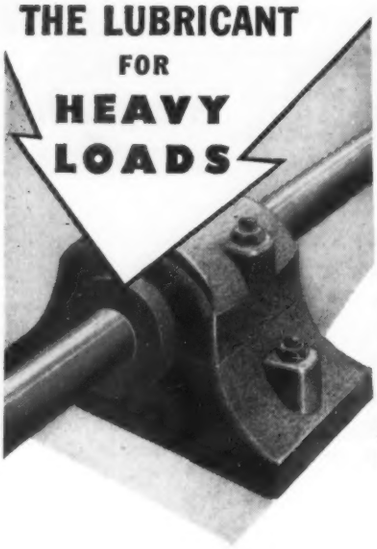

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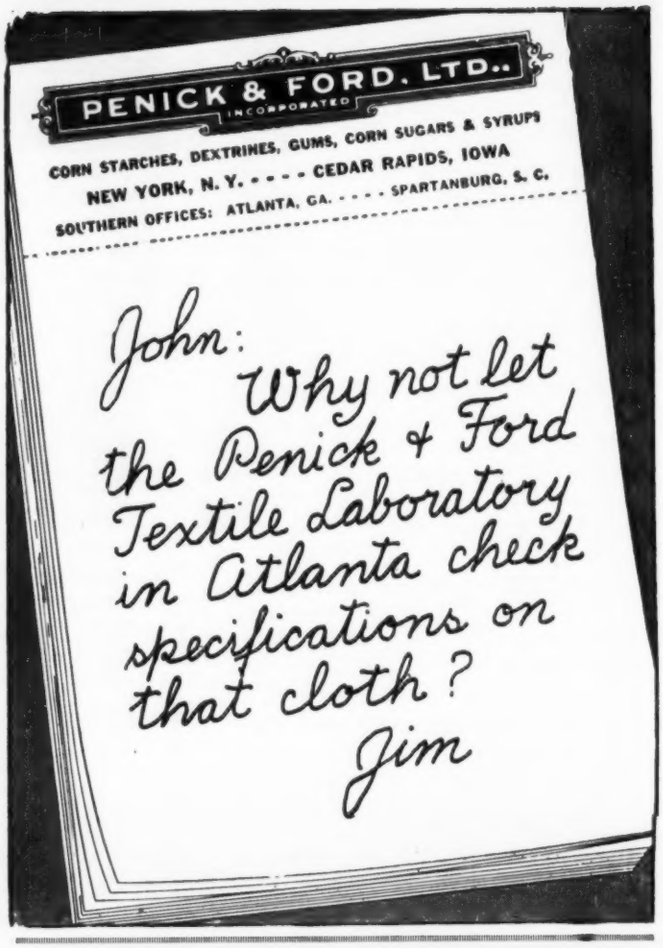
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Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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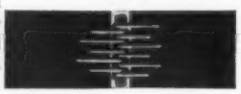
Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



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Get the maximum benefit from your new rings, and assure easy starting by making sure you have exactly the right travelers. A U. S. man is handy to your mill wherever you are. Call him. He will appreciate the opportunity to furnish you with samples, and help in determining the most effective traveler for your rings. And remember—U. S. deliveries are really prompt!

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gram at the mill. New carding, spinning, spooling, warping, etc., equipment has been installed. The project will cost about $1,750,000.

The Oakland plant of **Kendall Mills,** Newberry, S. C., has begun construction on an addition to the mill required to accommodate the installation of new machinery and not to represent an expansion in output. The project is estimated to cost more than $1,500,000.

Berkshire Woolen Co., Pittsfield, Mass., is expanding production facilities to Moncks Corner, S. C., where a warehouse has been leased.

J. P. Stevens Co., Inc., has plans to improve three of its textile plants and facilities in Great Falls, S. C., the expenditure to be about $2,000,000.

Riegel Textile Corp. is installing 5,000 new spindles at its Trion, Ga., plant.

Erwin Cotton Mills Co., Plant No. 8, Stonewall, Miss., is planning domestic water supply and sanitary sewer systems for the 215 village houses. The plans and specifications are being prepared by Lockwood Greene Engineers, Inc., Spartanburg, S. C.

Two plants have received the Liberty Mutual Insurance Company's Accident Prevention flag in recognition of outstanding industrial safety records. **Drayton Mills,** Spartanburg, S. C., operated more than 11 months without a lost-time accident, and **Firestone Textiles,** New Bedford, Mass., for holding lost time accidents 68% below the industry average.

Duplex Fabrics, Inc., Los Angeles, Calif., a subsidiary of Burlington Mills, Corp., Greensboro, N. C., has arranged for a change of company name to Burlington Mills California Corp.

New London Mills, Inc., has been organized to manufacture textile products, and has plans for a mill in New London, Conn., reported to cost over $350,000, with equipment.

Hancock Fabrics, Inc., has been chartered under the Delaware state laws with a capital of 1000 shares of stock, no par value, to manufacture rayon fabrics. The location has not been announced as yet.

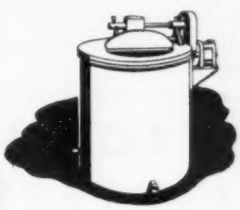
Swift Spinning Mills, Inc., Columbus, Ga., has let general contract for extensions and improvements in the mill, to include a one-story addition to the carding department, new dust room in warehouse No. 1, and alterations and improvements in warehouse No. 6. The cost is reported as close to $90,000.

Pilgrim Corp., operating Pilgrim Rug Co., Pawtucket, R. I., has acquired a one-story building at Hinesville, Ga., and will improve and equip for a new mill. Certain equipment will be removed from the Pawtucket plant. Samuel S. Carufel is president.

Congress Wool Service, Inc., Boston, Mass., has been chartered with a capital of 5000 shares of stock, no par value, to operate a wool scouring and sorting plant. Raymond P. Kinnon is president.

Michael J. Fitzgerald, Worcester, Mass., has acquired the Millbury, Mass., mill of **Hayward-Schuster Woolen Mills, Inc.,** East Douglas, Mass., for a reported consideration of $190,000, exclusive of machinery. The company will continue operations at the East Douglas plant and will increase the working force.

De-Size Kettles This Low-Cost, Easy Oakite Way



NOBODY knows better than the man who's had to remove troublesome sizing from kettles what a tough job it can be. But with a recommended Oakite material de-sizing is done *quickly, easily, thoroughly.*

All you do is fill the kettles with solution of recommended Oakite cleaning material. After soaking for prescribed period, drain off solution and suspended soils. Then hose-rinse all surfaces. You'll find deposits completely removed.

Further details on 66 textile mill cleaning jobs, yours FREE. Write to Oakite Products, Inc., 26C Thames St., New York 6, N. Y. for "Oakite 66 Digest".

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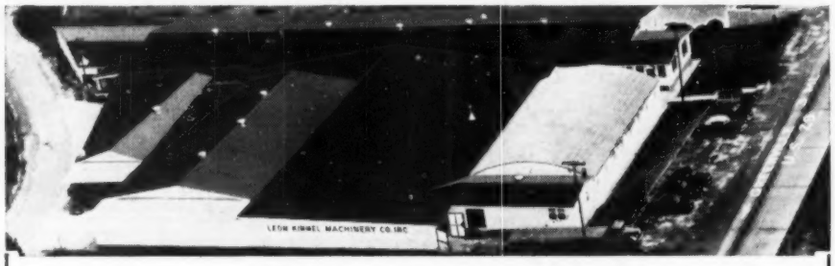

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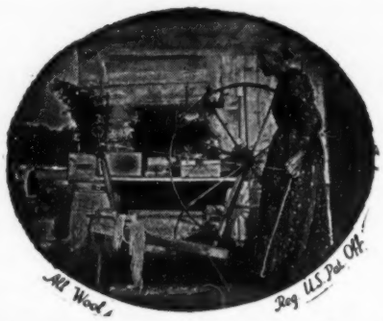

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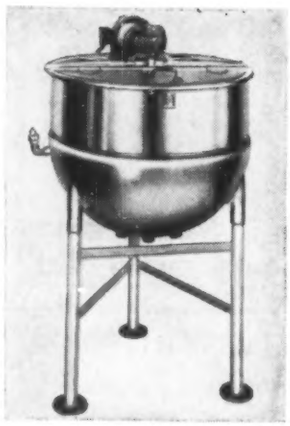

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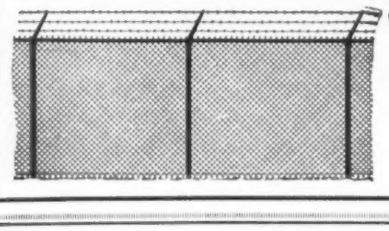

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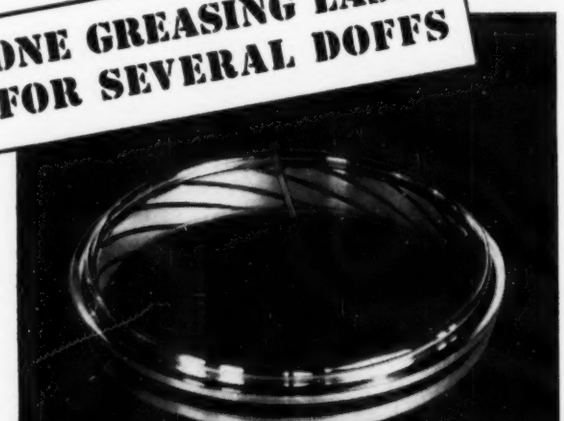
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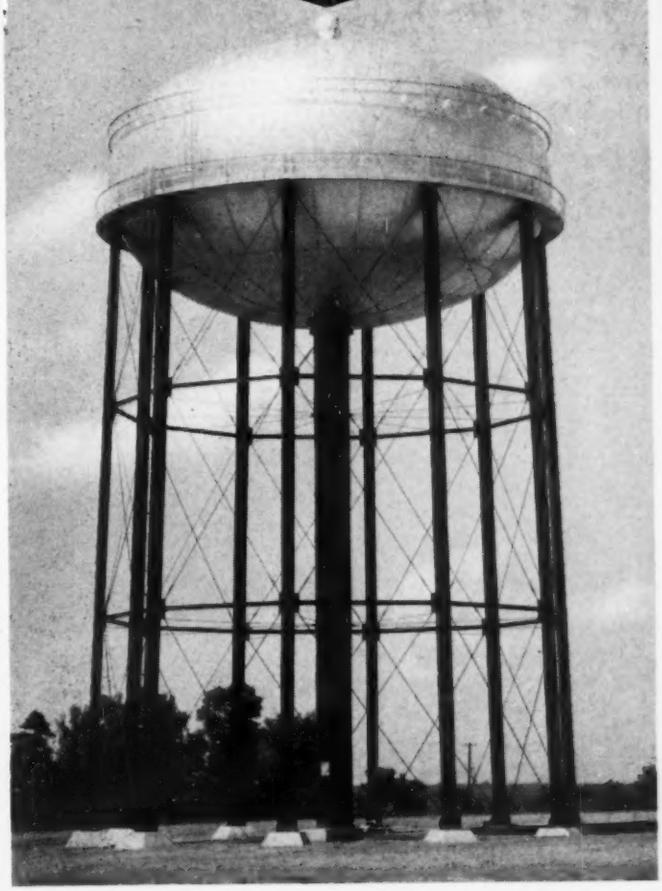

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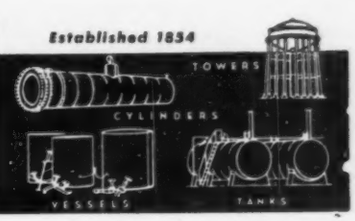

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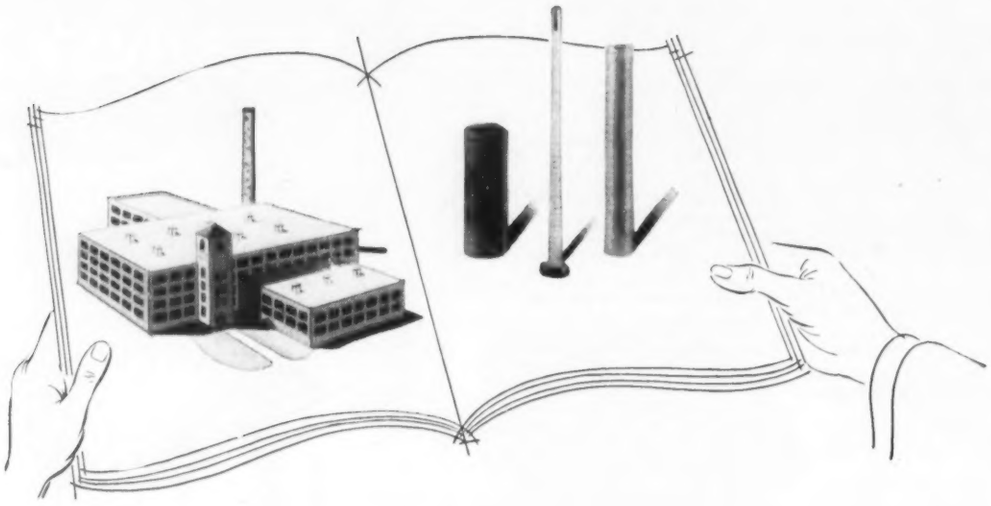

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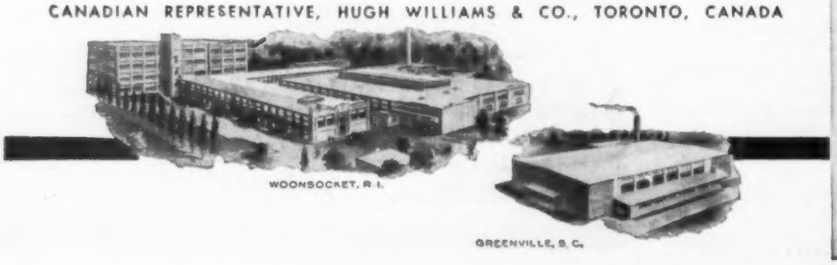
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